









Journal  
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Having the distinguished honors of being invited to preside over the Naval, Military and Air Force sections of the Congress I learned with some impatience that it was expected of me to open the proceedings by reading a short paper, and was with me surprised to find that my name was placed that I had no new message or discovery to give you, and that of the vast subject of which you are so facile, my own knowledge was that of a tyro; hence I have been compelled to wait about for some subject under which I had at least a passing acquaintance and which possibly might interest you.

Having spent a large part of my life young down by the sea on ships, it seemed I ought to know a little of the difficulties which beset the working sailor, those which his increasing age, those which will certainly befall him, and his family.

I will have extended the provision of war surgery, both past and present, to hospitals in too small towns to name, of just one and only all surgery about as much the same as surgery elsewhere, there can be no finding any bound stop than in the hospitals, and there are no more less than in a town hospital, and again one's difficulties may be solved by a complete solution, where the stop and all ends are reached. The conditions of war are no

readily persons of a very mixed part of the activities of the world but it is true he is forever preparing for them, but that preparation is after all but incidental to his life, and it is to the health of the sailors and the hygiene of the ship that we must turn for the real problems which have been fought out by the ships' doctors with varying success for the last two centuries.

In the year 1716 was born a great naval doctor, James Lind, M.D., F.R.S., who thought and read and wrote to great effect on the years of his active service. From 1740 to 1746 James Lind served at sea on the Royal Navy, gaining experience in many waters, tropical, sub-tropical and temperate and in the year 1746 was appointed Physician to the Royal Naval Hospital, Haslar, a position which he occupied until 1764. Here for twenty-five years he ministered to the sick of the fleet from all parts of the world, met his conditions varying often and accumulated knowledge. About this time scurvy and jail fever were perhaps the two greatest scourges of the service afloat. In 1754 Lind published the first edition of his famous book on "Scurvy," and as evidence of the dire import of this disease he states that during the 14½ years scurvy cost off more valuable lives than the worst effects of the French and Spanish. He himself, in one ten years' service in *Calcutta* lost eighty cases of mortality out of 360 sailors. While in Lind's voyage round the world 75 per cent of the crew succumbed to the disease. *Thrombus* could be multiplied. Lind urged the use of the juice of oranges and lemons but it was not until forty years later, through the efforts of his follower, *Blane*, that his methods were introduced throughout the Navy and almost at once the disease became a matter of history. Lind too at intervals of his time, recognized that typhus, or jail fever, was a deck disease, and although he did not go so far as to suggest that the louse was the vector, yet he urged the necessity of the destruction of all rugs and clothing which were brought on board by the passing men, and stressed a scheme in which the men should first go to a receiving ship where their bodies should be showered, their clothes burned and a new uniform outfit provided before joining their ship. In those years jail fever was an ever present menace to newly commissioned ships or whenever the complement of a ship had to be reinforced. There was no rigorous inspection of the recruit; he was landed straight from the common lodging houses, taverns or even jails, by the purveyor, direct to the ship in which men were required. Can one wonder that under these conditions infection was rife?

Lind wrote wisely and well about overcrowding, ventilation, diet and many other matters. *Disinfection*, too, occupied his mind to no small extent. Some of his methods may now strike us as modern, even, astonishing. There is sound common sense in all he writes. He lampshaded his ships by burning wood fires; his stoves and sulphur between decks, ventilated by means of wind sails and open ports whenever possible, air to the foremast of the ship and prohibited scrubbing down after sunset.

He knew enough of the death-dealing powers of the miasma, but advocated that ships should be well vented to sea, when at anchor off the French Coast and other fever-ridden districts: he advised that women should not be allowed to sleep on shore in these countries, but if compelled to do so by the exigencies of the Service, that simply they should be kept burning in and about their beds, and he advised the use of "bark" both as a tonic and preservative of equal forces.

It is known when he held that stored water-jackets were necessary in ships, with a constant supply of fresh provisions and greens together with gales hourly as necessary to prevent pulmonary complaints prevalent at that season.

Curiously enough he has not much to say about miasmatic diseases, which he probably looked upon as a necessary evil, to be dealt with by surgery in common cases.

Another problem which concerned Lind as well as all seafaring men of the time, was the maintenance of a fresh water supply: indeed, he invented and installed a very practical distilling apparatus for obtaining fresh water from the sea. His well consisted of a power mill head, with a condensing worm contained in a closed cask, but his installation was not however taken up by the Admiralty, and he had the trying experience when some years later leaving a surgeon in the *Royal Harry* was awarded a grant of £4000 from the House of Commons for an inferior apparatus. Enough has been said, I think, to show that Lind was a great man who contributed in his proper place the spirit of the best type of sea doctor, who steered and studied how to master the and difficulties inherent in the sea.

After the wars of the eighteenth and early part of the nineteenth century came a time of peace for the Navy, and the medical service was not a popular one and good doctors were difficult to obtain: nevertheless, steady advances continued to be made. Vaccination was made compulsory in the Navy in 1818, but as far back as 1800, nasal syngenes were given provisions to inoculate any person so desirous, and in the following year as popular but vaccination became in the Navy then eighty one Naval doctors imposed by Trotter, presented Jenner with a gold medal, as acknowledgment to their order when so realized how great would the assistance to Jenner's practice at that time working in our preference.

Turning to more modern times concurrent with the growth in use of ships, the change from wood to iron and steel is also to their construction grew difficult as ventilation and the makers long struggle in the history of naval hygiene until to-day we have of necessity a complex system of natural and artificial ventilation, with electrically-driven fans for supply and exhaust, a detailed party of skilled men employed in its control, and for the medical officers ever to keep a watchful eye upon. The distribution of fresh water supply have been constant every ship carrying an efficient distilling plant. Life about has gradually become easier and more humane. Where then do the problems of the present day medical officer come in?

The first great problem is perhaps that of the carrier, no longer will any type of young man be suitable, the days of the pressgang are long gone by. In day the carrier is rather common offered by the Royal Navy are much sought after, and the candidate must undergo a very searching medical examination. The examining officer must not overlook any disease or congenital tendency in the man; he must be an efficient soldier, able to do his own share of the work, with share of responsibility.

In a modern capital ship the medical officer finds himself responsible for the health of perhaps some 1,000 men. He must make himself acquainted with the general layout of the ship, ventilation, sleeping arrangements, water supply and waste water, he will have to supervise the supply of fresh food, especially, vegetables and fish in tropical waters. At times he must be prepared to sail for and give an opinion on the possibility of shore water, when for any reason it is used on board. Periodically he must make a physical examination of every man on board and be responsible that they are well and efficiently vaccinated against smallpox and inoculated against various diseases. All this over and above his ordinary duties in the care of the sick. Of his ever-present problems perhaps the greatest are water, cables and reserved domains. In our great ships many of the things we of necessity are obliged to, being well working in confined spaces, necessarily crowded in spite of the great care taken in providing means of ventilation. A man of influence comes and we have the very best conditions to encourage him to do his stuff. Much attention is being given to this subject today, and everything is being done that is possible, but in spite of this our mortality rate from this disease is still too high.

Yaws disease, the cause of which the world over is attacked with indifference by all Naval medical men, first by systematic hygienic measures, and recently by the most efficient methods of treatment known. In recent years our efforts have been marked with considerable success, but the problem still remains.

For years the Naval surgeon faced the problem of infectious fever, which annually caused a vast travelling rate from the Mediterranean Station, and I was glad to say how their share in the great work of the Royal Commission of 1904-5, which resulted in the almost complete elimination of this disease on the forces stationed at Malta. It was Dr. H. M. P. M. D. of our Naval Hospital at Egypt, who early in 1906, became so convinced of the necessity of the re-examination of the Commission that he boldly took the courage to both hands and abandoned the use of that filthy filthy staple food of the local hospitals, goat, milk, substituting preserved milk obtained from England. The results were striking. Malta fever ceased on the Navy as abruptly as every had done years before.

During the war years gonorrhoeal fever occupied my minds just as much as the Navy as in the Army, and much research work on the carrier problem was done by the Naval surgeons who soon came to the conclusion that the carrier was ubiquitous, and that the remedy lay not in segregation,

-pressure, or ventilation— but as good hypoxia. The manner of them in depth with the various diseases and disorders is, disturbed as inadequately in the literature elsewhere, perhaps none so far as the detailed description of the various is physically more dangerous than others. I might cite the names of Hansard-Smith and Doolley, both Naval Doctors, who have earned world-wide reputations for their work in this connection.

From time to time other control-the-way jobs fall to the lot of the sea doctor, he may be appointed to a submarine depth or depth ship and must be acquainted with conditions and his own submarine craft, to say nothing of deep sea diving with its problems of decompression. Again he may be appointed to an aircraft carrier and he must know the requirements for a successful aviation personnel analysis, the mechanism of depth perception, auditory images under flying conditions, reaction times, the significance of moderate hypoxia, etc., and it is imperative that he should have a sound knowledge of gas warfare protection and decontamination.

I could produce an endless list of requirements if the sea doctor is to be happy in his efforts to grapple with his multifarious problems, but you will think I roughly have talking.

I will be content therefore to conclude by hoping that I have given you a slight idea of the many interests we have, and to suggest that it is not after all the full moon that it would appear to the budding "Escapist" of the sea when skyed entering the horizon.

## A MALIGNANT TUMOUR OF THE THYROID GLAND

By JAMES GORDON I. A. DUFFIN D.M.B. (S.)

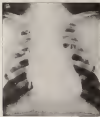
Two points of consideration thus arise:—

- (1) The reproduction in the tissues of all the elements of the nuclei of the thyroid gland.
- (2) The long duration of the growth.
- (3) The disturbance of the secondary growths.
- (4) The long secondary tumour which the gland volume on responding with no sense of cellular defence resulting from an old injury to the cell.

General History.—J. G. E., aged 44, continued an injury to his back by falling across a gutter in March 1920. In September, 1920, he was admitted from his employment suffering from "Acute Fibrositis and Chronic Bronchitis." In November, 1928, X-ray photographs revealed the presence of a tumour in the anterior mediastinum. X-ray photograph

developing rapidly in fatal infection involving the lower-lumbar region of the spinal column.

On June 16, 1907, he was admitted as a patient to the B. N. Hospital, St. Louis. He had severe pain and tenderness over the upper lumbar vertebrae; marked edema of the neck, chest wall and both arms; marked cyanosis and respiratory distress. X-ray showed well marked vertebrae deformations of the spine from the tenth down to the fourth lumbar vertebrae. Symptoms were progressive and patient died on July 7.



Figures 1 and 2. Tumors in the vertebrae and lumbar spine on September 2, 1907.

*Post-mortem Examination: General*.—No lung abscesses. Meninges congested. No lesions of brain.

*Tumor*.—The neck, shoulders, arms and back were very markedly edematous. The whole of the anterior mediastinum was occupied by a dense, brown tumorous mass adherent to the sternum, but not involving the bone. It was firmly adherent to the right lung—surrounded the aorta and the root of the right lung—surrounded the superior vena cava and covered the bases of these vessels. The right pleural cavity contained a large amount of serous fluid. The right lung was collapsed. The left pleural cavity also contained some serous fluid. Both lungs showed a few small

two days about the size of a pea. Flagg markings were striking throughout, especially at the vent of air and pinnules. The tumour arose on the mesenteron directly rostral the wall of the oesophagus and right ventricle. The wall of the left ventricle showed a small secondary tumour on its anterior aspect. The heart was not enlarged and there was no valvular disease.

**Abdomen.**—The peritoneum contained a small amount of blood stained fluid. The liver was not markedly enlarged (14 cm.) throughout, lobes showed a large hepatic artery tumour and there were several smaller tumours scattered throughout the liver substance. The spleen (7 cm.) showed no disease. Both kidneys were congested. Septicæmia was marked. The pancreas was haemorrhagic. Incessant vomit were passed. On the ventral surface, from the sternum dorsal to the fourth lumbar vertebra, there was a large tumour mass under a flap on the adjacent mesenteron but less dense than those. The mass almost completely occluded the vertebra and in places, was visible on either side of the spine's processes. It was freely adherent to the vertebra and produced marked erosion of the anterior surfaces of the bodies of the seventh dorsal and the first and second lumbar vertebrae. The spinal canal was intact and there was no compression of the cord.

**Microscopic Examination of Section.**—The tumours showed the following characteristics:—

(1) **Primary tumour** was dendritic and fibrous septa divided the tumour into lobules.

(2) Blood vessels appeared to be confined to the interlobular spaces and there was early extensive necrosis of the centre of the interlobular lobules.

(3) Small round cells, spindle cells, reticulum cells and giant cells with single nucleolar nuclei were present in varying proportions, large flat epithelioid cells in nests or forming a concentric arrangement resembling Hassall's corpuscles were a marked feature and in parts of the tumour were so numerous that the picture presented was that of a squamous cell epithelioma. The growth in the anterior mesenteron was extensively fibrous and only small areas of tumour cells persisted. The growth involving the lumen of the sigmoid, was later showed extensive degeneration, and the tumour cells, surviving only in the immediate surroundings of the blood vessels gave the tumour a giant melanoblastoma appearance.

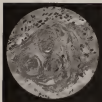
In the lung where the secondary growths were the most recent the polymorphism of the cells was well marked and the only central necrosis of the lobules was evident.

In portions of the liver growth the predominance of the spindle cells gave the tumour a sarcomatous appearance.

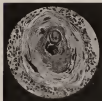
I am indebted to Surgeon-Commander E. H. Falkner D.S.O. for the foregoing photographs.







(1) *Section of a fossilized shell showing concentric growth lines.*



(2) *Section of a fossilized shell showing concentric growth lines.*

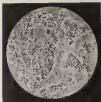


Fig. 1. The distribution of particles in the plane of the



Fig. 2. The distribution of particles in the plane of the

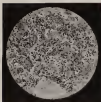


FIG. 1. Micrograph of a mineral specimen, showing a dense, granular texture.

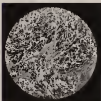


FIG. 2. Micrograph of a mineral specimen, showing a dense, granular texture.

## THE DURN SUBMERSIBLE ESCAPE APPARATUS

(By Captain J. H. DURN, R. N. RETIRED, D. S. O.)

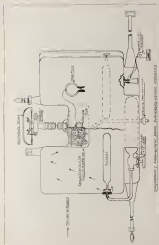
THE DURN SUBMERSIBLE ESCAPE APPARATUS was invented by the late Mr. J. H. Durn, who was in the Royal Navy as an engineer, and I think will interest many and to supply some information which may be of use to them at some time in their service career. I believe I am correct in saying very few have ever heard of this apparatus, and of those I know not many have used it.

The Durn Submersible Escape Apparatus or D. S. E. A. as I shall refer to it in future, for brevity was first taken up in the Royal Navy about eighteen months ago. It was invented by J. H. Durn, then, Managing Director of Messrs. Beale's, Ltd., London and is similar in principle to the well-known "Pinto" patent self-contained breathing apparatus which has been in use to some extent for many years. The apparatus has been experimenting with and showing there was in the use of a somewhat similar type of apparatus some 1880 I think. The D. S. E. A. was designed with the object of enabling officers and men to escape from submerged submarines which for any reason were unable to rise to the surface. However, though it was primarily designed for the above reason it has two other uses.

(a) *As gas respirator or "duck helmet"*—It has been worn in the experimental chamber at Foville Street, London, for periods of at least twenty minutes in both ordinary and hyperbaric gas without ill-effects. Its life is of course short as compared with that of the standard Service respirator, but it enables the wearer to enter atmospheres which would be impossible with the latter for surface atmospheres deficient in oxygen such as double bottom— with the addition of a Frothington's head it becomes a very successful smoke helmet.

(b) *As "Shallow Water Diving Dress"*—It is only necessary to use a weighted belt to transform the apparatus into a highly satisfactory diving dress. In the summer of the year 1929, an officer wearing this apparatus went down to a depth of 10 ft. in Portsmouth harbour and swam through a 14 in. wire barrier on six minutes with a backache, this being quicker than a diver could do it, but there is no reason why greater depths should not be reached so long as the wearer does not remain there too long. The apparatus has been used for measuring the under water ratings of ships, and it is expected that it will be employed extensively for this purpose in future climates which will entail a very considerable saving of time, because a diving bell and man will not be required. The D. S. E. A. will enable men who have experience of the under water ratings concerned, but who are not qualified divers, to descend and carry out the measurements in the buoyancy of the apparatus when normally inflated to about 15 lb. It is necessary to have the belt weighted to 25 lb. at least. A small





I will now describe the D.V.L. A. mask, and reference to the accompanying photograph of a person wearing the apparatus, and to the two diagrams will, I believe, make it easier to understand. The apparatus consists of a vulcanized rubber and canvas breathing bag which when inflated is buoyant. This bag has two tubes, and it is essential that these tubes should be kept up on the shoulders when using the apparatus as the apparatus, the pressure in the water and the bag, then both being buoyant. The capacity of the bag is about eight litres. Inside the bag and between the tubes is a chamber that contains about 15 cc. of calcium hydroxide granules which absorb carbon dioxide. The length of life of these granules depends on the resistance of the water, and they are capable of absorbing about 30 litres of carbon dioxide. At the top and bottom of the chamber were granules fitted to return the granules and permit free passage of gases. To the top of the bag is connected a corrugated rubber tube which has a mouth piece and valve at its free end. The water must breathe mainly through the mouth piece and tube and a one-way is provided to ensure that this takes place.

The valve and the mouth piece must be kept shut when the apparatus is not in use, otherwise the calcium hydroxide granules will absorb carbon dioxide from the air with the resultant shortening of the effectiveness of the apparatus. This valve must also be closed on coming to the surface to keep water from entering and upsetting the buoyancy of the apparatus.

At the bottom of the bag is a rubber pocket and an automatic exhaust valve. The former holds a small flask containing about 30 litres of pure oxygen at a pressure of 180 atmospheres. The flask has a control valve as it is and is connected to the bag by a loosely set and a short length of rubber tube. The flask is further secured in the bag by a small strap round its neck.

The exhaust valve fitted to the bag is similar to the valve on a barrow pump; it is fitted to enable the excess pressure of oxygen to escape when the water begins to ascend to the surface and the pressure of the water on him decreases.

When using the apparatus as a life-belt, or when using it out of water, it is necessary to keep this valve shut. This is done by holding over the valve and putting an ordinary paper clip on it. It is of great, indeed of vital importance that this clip should be removed before attempting to use the apparatus for escaping from a submerged submarine. The clip should be closed over on to the edge of the bag when not actually in use, so that it is ready to hand.

At the back of the bag, and attached to it, there is a long rubber tube fixed with a motor type connection valve (Schmidt) at its free end. This tube is the means of supplying the bag with oxygen from an outside source, such as a gas cylinder fitted to the submarine, and should be the first supply used, if possible in order to conserve the oxygen in the small cylinder attached to the bag. The outside source will be found to be very

is covered by the membrane and is the most important of the processes of the frog's lungs, the point. This structure, the submarginal membrane, has various functions. Contracted, some oxygen (or nitrogen) will be supplied until movement and then it will be filled with multiple gas (oxygen) in which the rubber tube mentioned can be attached. In an emergency, the number of bags one of these large cylinders will change, it is necessary to depend on the size of the cylinder, and the depth of the submarginal membrane.

Although the oxygen is scarce, there is still a further supply of oxygen in the form of two small bags called (1) (2) (3) (4) inside the bag, one on each side. They contain about 1 liter of oxygen space, and should last about seven minutes each. To release the oxygen it is only necessary to snap off with the fingers the soft rubber stems fitted to these bags.

The apparatus is also fitted to the wearer's neck by means of a strap fixed to the outer top corners of the two horns, and is secured down round the neck by two main straps which are attached to the bottom corners of the bag, cross behind the wearer's back and then joined together in front by means of a clip hook and eye.

#### METHOD OF USING THE D.R.B.

##### (a) Under Water — The apparatus is the 'Ready' position —

- (1) Thong round the neck, and strapped round the waist
- (2) Goggles on. Note: They should be dipped in water before being put on
- (3) Paper clip off
- (4) Mouthpiece round neck.

When the water reaches the net on the outside sleeve cylinder, and not before, or oxygen will be wasted —

- (5) In mouth piece
- (6) Charge bag, from manifold, if possible, otherwise from small tank. One should be taken out to charge bag more than two-thirds full, as if it is charged too full, the pressure inside the bag when the depth is decreased, may not have time to escape quickly enough through the exhaust valve, and breathing will become difficult.
- (7) Look back through the rear and put on the main clip
- (8) Open mouth piece valve and carry on breathing through the mouth. Again care must be taken to ensure that oxygen does not escape through the nose due to a badly fitting clip, nor through the mouth as a result of not making a good seal with the lips round the stem of the mouth piece.

##### (b) In a Life Boat — On arrival at the surface —

- (1) On paper clip



(2) When lay, up to and might rather than do much that, or having caused it the more rapidly. All the lay, being the, was considered, and, when the bag is full, the mouth-piece and rubber connects the mouth-piece from the mouth.

(3) Use of Water — The procedure is as for gas under water, except that the paper ship must be in and there is no risk of suffocation until the water reaches the rubber cup.

Having described the apparatus, and the methods of using it, the following interesting points were in connection with the various risks run by breathing air in pure oxygen under pressure. To go into detail or to give many statistics would require more much more space than I have at my disposal. It has been found, however, that a person can live quite well on pure oxygen alone for a considerable time at atmospheric pressure and it has been shown definitely by experiments on animals that in breathe pure oxygen for more than a very short time, a greater pressure than that met with at a depth of 15 fathoms (or 30 ft.) is no less the risk of oxygen poisoning. As a matter of fact an officer has been down to a depth of 180 ft. for about five minutes without ill-effects and I understand some Spanish and American sailors have been down to a depth of 300 ft. for longer times than without coming to any harm.

Oxygen under high pressure for a short time, causes the constriction of the blood, causing tingling of the fingers and toes, constricting of the muscles and convulsions. Under a lower pressure, if the period of exposure to longer oxygen will attack the muscles and muscles of the vessels of the lungs, producing an embolism and consequently, resulting in a double heart failure. Treatment of the latter will be found on any standard book on medicine, but there is no treatment for the former. Naturally it was desirable to avoid this condition, so the possibility of using pure air, or very dilute pure oxygen and 90 per cent air in the tank was considered, but neither of these alternatives brought me any agreement from the doctor in order on the basis of common sense is compromised in these and oxygen poisoning. Common sense in my opinion will probably agree unless a decompression chamber is at hand when a sick man, more than a very few minutes to escape from depths greater than about 30 ft. can recover from much pressure poisoning, but find it coming up to the surface directly or, if not, I am unable to imagine any man who has been taken down enough to get out of a submerged submarine, prolonging the time he remains under water.

Carbon dioxide is caused by the liberation of nitrogen in the blood and causes in the form of bubbles. When a person breathes an under pressure greater than the pressure at a depth of 30 ft. some of the nitrogen dissolved in the oxygen enters solution in the blood but if the pressure is released quickly the gas free in the blood going out to form a part of the following symptoms —







has a place in the treatment of uncomplicated chronic hypochlorhydria.

3. *Intermittent relief*—The basic solution has been recommended for use as a sleep sedative, and has been very helpful in cases during a long period of rest, thus doing its work when the patient is alone and preparations which have a dual action as a strong sedative and cathartic. It has the advantage of being administered by a change of water orally, by enema, subcutaneously or intravenously.

Doses of 0.1 gr. in powder form, three times daily for one day, as a natural course for an attack, the course being repeated after a resting interval of one week. The suggested test proves that the secretion of the drug is via the kidneys.

Symptoms were mild in pill form and more severe in the electrolyte, as when acute symptoms have been controlled by a few weeks.

There is no doubt that the best method of administering patients is by oral solution, and it is much used in this manner in the treatment of gastric dyspepsia.

The suggested treatment is outstanding in the story as an enteric solution and percentage of solution, which means of being treated on these bases, and in the experience of the writer, only one use of solution has been to the extent of over 100 cases as treated.

The use of sodium as described under gastric function is carried out at night and 10 cc. of a 0.1 per cent solution of sodium is given at 4 a.m. each morning, preceded at 4 a.m. by a 2 per cent 0.2 per cent solution of sodium bicarbonate. The sodium bicarbonate comes from the level of sodium and is retained in the normal intestine for the sodium solution should be retained by the patient for as long as possible. The patient is given from an enema with the patient lying on the right side to enable the solution to reach the terminal colon and ileum. In final time for retention of the solution is less to eight hours. But we have frequently had patients who absorb it entirely and a strong osmotic effect is given with patients confined for two hours per day with oral treatment with B.H.I.

The safety of attaching the solution by enema is well as it is capable of obvious. It seems apparent to most in direct methods of administration by the enema in this manner.

#### CONCLUSIONS

(1) The use of sodium hydrochloride tablets as should be limited to the indications we have mentioned and not be used as a direct course.

(2) Potassium bicarbonate tablets by means of an undiluted solution on both negative and static forms of HCl hydrolysis is a most effective drug, especially when used in combination with other. It has a high density and we would emphasize the need for ensuring that the patient's cardiac condition is good before administration of P.H.I.

(1) The patient usually should be given a rectal tube when C.B.I. is not tolerated and completely unable to tolerate oral intake.

(2) It often is difficult to obtain a measurement of the time of hospitalization and the percentage of relapses in patients.

(3) Several clinical factors indicate when treatment is associated with the illness or would mention that the production of diarrhea need not be considered a reason for stopping short administration as it is not certain that a certain amount of bacteria of stool counts.

#### DISCUSSION OF CLINICAL STAGE

In this instance, the treatment of the complications of disease, depending on measures to achieve timely therapeutic response. It will be noted that whereas a series of clinical signs may indicate the condition, in some cases a definite diagnosis is impossible without exploratory measures, that is particularly so in hepatic disease.

(1) *Acute Hepatitis* may be regarded as the preoperative stage of hepatic disease, and often does occur independently of the liver. Symptoms vary and during any stage of the infection, e.g., chills, nausea, dyspepsia, symptoms the patient complaining of malaise or fever and pain over the liver. The leukocyte count, some a temperature, the liver is usually enlarged and tender and a leukocytosis may be present.

A course of treatment of systemic hydrochloride is indicated in the existing condition without loss of value against and local application, such as fomentation and dry cupping.

In a neglected case one must consider the possibility of chronic hepatitis, in a particularly if patient persists with a continuing and severe course of disease.

(2) *Hepatic Abscess* usually being one of the commonest complications of an abscess has the same varied manifestations. Abscess formation in the liver frequently occurs with exhibiting an active local symptoms, but the formation which may have been forgotten or even have passed unnoticed.

Hepatic enlargement, painless loss of weight, fever, chills and fever with severe symptoms and in the late stages an intermittent fever with (1) often with a temperature is often a feature. A loss of weight and failure in the right hypochondrium, accompanied by pain of a stabbing nature, which is often worse at night or on coughing or frequently associated with a dull and aching pain around the shoulder and other right or left side according to the position of the abscess is a classical symptom.

(3) The presence of a palpably enlarged liver or local tenderness in most cases, but a few may only meet with these signs to be expected.

A polymorphous leukocytosis is usually present, which may be as high as 20,000 per c.mm. but averages about 10,000 in most cases.

When a patient is seen for the first time, the physician should make a statement of the symptoms. Any condition that is thought to be a liver abnormality for an attempt is made, into the lung, without having been suspected, and more than one case of hepatic disease has only come to light at autopsy. Approval must be comparatively common, and signs must be accepted as evidence of threatened hearing of an obscure and suitable measure taken.

#### Technique

A.—Pneumonia by exposure, dealing with metastatic dysentery and hepatic carcinoma itself as an obscure disease.

B.—Exploratory laparotomy is indicated in all cases where chronic formation is suspected, and in treatment of gas in the abdominal organs. It should be made when possible for the physician, to open operation of necessity. We cannot too strongly urge the necessity for the early and immediate use of a needle when any suspicion of chronic formation arises. Nothing is a comparatively simple operation only too often avoided on account of a false idea of its magnitude. It is a procedure requiring a course of study of case rather than an extensive surgical training, and falls well within the scope of the average practitioner.<sup>1</sup>

Once gas is formed it is essential to operate until all the gas is removed.

Because 2 per cent. strength, for local anesthesia is suitable, but in nervous individuals a general anesthetic may be required.

A tender backward area, fixed pain, pleurisy, or peritoneal friction or localized edema will indicate the need, likely spot to attempt exploratory operation. In the absence of any such localized signs, consideration of the fact that most diseases occur in the upper and posterior area of the right lobe should be taken advantage of and exploration undertaken on the anterior-sillary line in the eighth and ninth interspaces, 1 to 1½ in. from the costal margin, well below the pleural level. The needle should be inserted in an upward, upward and backward direction to a depth not exceeding 1 in. Hope of striking gas should not be abandoned until some two or three punctures have been made.

Measure should now be made that even when no gas is found, careful observation in the present conditions frequently results in the hepatic phlebostasis.

Any examination will provide positive evidence as to position except when the disease is centrally situated.

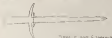
The commonest diagnostic appearances are upward enlargement of the liver, bulging of the right dome of the diaphragm, and, on a vertical, obscure enlargement.

When the diaphragmatic surface is marked it is suggestive of an obscure situated near the upper surface of the liver.

<sup>1</sup> A. H. Hall, *Proc. Roy. Soc. Med.*, vol. 10, p. 10, 1917.

Conductance is expressed in Siemens (S) per unit length in cm or S/cm. The conductance of a material is the reciprocal of resistance. The conductance of a material is related to its resistivity ( $\rho$ ) by the equation  $G = 1/\rho$ . The conductance of a material is also related to its length ( $L$ ) and cross-sectional area ( $A$ ) by the equation  $G = A/L\rho$ . The conductance of a material is also related to its temperature ( $T$ ) by the equation  $G = G_0(1 + \alpha T)$ , where  $G_0$  is the conductance at 0°C and  $\alpha$  is the temperature coefficient of conductance.

Microtomy should be performed on a thorough course of RBE and other procedures of the "brush and burn" for smoking cessation.



1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

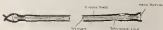


Fig. 10 shows a different drainage as called for Mason's original content of the two most frequently employed. The concrete head in the upstream of the drainage tube by means of an apparatus consisting of a spring and weights, can be kept up, on line on the latter a steel right 14 mm. and a steel 16 mm. diameter and 1 mm. lengthened and a steel length 1 mm. diameter.

The three human beings, been fixed to the ends of the rubber tubing and one fastened tube having been cut at the distal end for drainage purposes, the model could be expanded to stretch the rubber tube, each end of the model being, as the letters capped extremities of the intestine. The tube, consequently, if it was to be passed through the example.

Dr. Johnson: I digital of the above having been examined by the government they find no mention is made for item 1 as through the digital is covered in my opinion. The second and third are also inserted into the memo. It is for reference and after allowing a little time to pass I will have the drawings also inserted on the table.



translucent via the central incision, leaving the epiglottis in its original undisturbed form. The cannula can now be withdrawn, but, as the drainage tube and stylet are present. The stylet is now slipped from its position in the lumen of the fine internal tube and allowed to rest in the tube at a point close to the base and the rubber drainage tube extending towards the wound margin. When intubation is complete the stylet is withdrawn, and the internal lumen and superficial tubing cut off, after transferring the tube at the wound margin with a safety pin.

*B.—Open Operation.* The route for open operation varies according to the size of the abscess.

(a) The transperitoneal route is used when pus is found below the costal margin. With the operating needle left in situ, a 2 in. incision is made in the abdominal parietes and the incision well packed out by sterile towels. Adhesions if present may be copied with by drawing them forage along the needle and the blades spread when the needle is withdrawn. The abscess cavity is then broken into with the finger. After the pus has ceased to flow the mouth of the abscess is lightly plugged with gauze and the margins of the wound on the liver are sutured to the parietal peritoneum and the rest of the operation wound closed. The plugging is now removed from the abscess cavity and replaced by a suitable size of drainage tube.

(b) The transperitoneal route is used in cases where the abscess is located through a costal interspace. Two inches of adjacent rib are resected, the diaphragm detached to the thoracic wall and then and the abscess opened in the usual manner. It is advisable where possible to reach the capsule of the liver to the diaphragm.

It is better to perform the operation in two stages when general adhesions are absent, packing the cavity with gauze in the first stage and completing the operation two days later, a drainage tube being then inserted.

Any cavity should be treated at once and the Curdell Shann method with most advantage in most instances in such cases.

We would here mention some details of after treatment and emphasize some of the salient points:—

(a) At first, drainage should be changed frequently, as the discharge is usually copious. After a few days controls are needed less often.

(b) Unnecessary tampering with the drainage tube is a mistake. It should not be transferred with as long as it is functioning well, and it should not be shortened before it is spontaneously pushed out.

(c) Impaired drainage must be attended to at once by unobscuring the way or, if need be, by making a counter drain. Delay may be fatal.

(d) Continued general adhesion one of three things—supported drainage, the presence of more than one abscess or some continued complication (e.g. pneumonia).

(e) Abscess insufficiency may occur owing to destruction of liver tissue. The presence of debris, and in a high percentage, clotted in the abscess

and increased levels of anxiety, depression, fatigue and stress.

2. The same information that is required should be given once only, and not at different points in the text. (3) The same should be used where it is relevant to more than one section.

1. *Adaptive Sampling*—When an element has been classified, yet possibly might be an *if* instance, integral information can be added by. The information such a source can or

was first used by Gorman (1981) and was accompanied or not by a female.

1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 26

The central point must be noticed. Dependence, mutual and reciprocal, cannot be denied.

For safety considerations, containment or removal of gas and loss of liquid is, despite signs, not emergency measures should be taken to drain the storage from within.

There is also the electron ion-discharge rate-a long time frequency component of the laser plasma has collapsed.

Intense, hydroxyl band should be present as wide intervals between

(1) However, breaking into a Service Company will not allow operations to be conducted in accordance with an approved lease. It is held to be illegal and considered part of the violation and is punishable.

The contents of the three classes, however, of the bones are not uniform, as observed and are mainly saline. Unfortunately when ground they all usually float.

(3) *Primary tubular tubules*.—This type of case is one in which the nuclei stick the large by extension from the chromatin wall as opposed to secondary tubules from the liver. These cases resemble highly vacuolated forms of *Leishmania* in many

Torsionless is an ordinary base for regular dextrality and the most regular self.

We have analysed, if here to mention a lengthy report into a relatively well-known and to some extent already the appropriate to insert the theoretical concepts of the *Journal of the American Veterinary Association*. We would emphasize the need for the complete and thorough treatment of all cases of anorexia, dysorexia, polydipsia, polyphagia and other food and water intake disorders. The clinical signs of anorexia, dysorexia, polydipsia, polyphagia, and other food and water intake disorders are usually nonspecific and may be associated with a wide variety of diseases. The clinical signs of anorexia, dysorexia, polydipsia, polyphagia, and other food and water intake disorders are usually nonspecific and may be associated with a wide variety of diseases. The clinical signs of anorexia, dysorexia, polydipsia, polyphagia, and other food and water intake disorders are usually nonspecific and may be associated with a wide variety of diseases.

It is not generally recognized, however, that while the composition of the atmosphere is not changing, the composition of the oceans is. The oceans are definitely unbalanced in regard to the ratio of the various elements.

U.S. should have been to express our gratitude to Dr. P. Stanton Baker, with whom we both worked at the Hospital for Tropical Diseases, London (he is now no longer alive) and were able to observe over a long period.

# THE NEW ENGLAND OPTICIAN AND SURGEON

(A WEEKLY JOURNAL OF OPHTHALMIC AND SURGICAL SCIENCE.)

During recent years, it has frequently appeared in a local paper of affairs (published in the *Western*) to quote short speeches and the like, and with down in a small part of the paper, and in the *Opticology* under the circumstances I thought a few remarks under the title of "The New England Optician" might be of interest.

During 1828 and 1829, thirty three cases of blindness were recorded in the General Hospital of Portsmouth. The number is small, as would be from statistics, but some interesting inferences can be drawn from an analysis of these cases. In order not to weary you with long lists of names and statistics, a paper has been appended with an analysis of these cases together with the statistics of all cases of blindness occurring in London and compiled by Mr. Dooley Harrison.

There was no case of blindness attributable to hereditary causes, with the possible exception of the case of blindness which he has been contracted at birth during the war. In the last six years, however, blindness is an important cause of blindness. In considering a case from the *Western* for blindness it is well, therefore, to take into account the fact that an uncorrected case may lead to blindness and estimate the error doubly for the present purposes accordingly.

A comparison of the cases occurring in Portsmouth with those of Mr. Dooley Harrison which occurred in London give several interesting features. Ophthalmia due to gonorrhoea is not appreciably more prevalent in Portsmouth than in London, and there were no cases of gonorrhoea and proctitis of later years. This happy result is no doubt due to a considerable extent to the energetic action of the Portsmouth Dispensary, under the able guidance of their medical officers of health Dr. Morris Turner. Ophthalmia, however, is a cause of blindness in nearly 10 per cent. of cases in my series compared with about 1 per cent. in the Dooley Harrison's cases. Accepting the statistics, many conclusions may be drawn of ophthalmia. It is more prevalent in Portsmouth than in London on the modern treatment, is not successful in preventing the permanent incapacitation in the modern treatment of the condition is not successful. Many ophthalmia, surgeons are of opinion that the modern treatment of ophthalmia leads to permanent blindness more frequently than the modern treatment, but that is not my experience. However, my experience is not sufficiently large for me to legislate. The only point on this matter is the number of cases of ophthalmia occurring in Portsmouth, viz., 1212 per cent. The relatively large percentage does not

A paper read before the General Congress of the British Association of Ophthalmic Surgeons at York, 1880, and the following, *Journal of the British Association of Ophthalmic Surgeons*, 1880.  
It is also the property of the British Association of Ophthalmic Surgeons.



seems both convex slightly where the center is, or a hard boss or old rubber tire-stem. There was a history of being in hospital with a bad eye. It is difficult to account for this except on the supposition that he had been exposed to some kind of striking injury like an fall. It would be just as well therefore to examine carefully for some slight superficial laceration or case of conjunctivitis by side-light rays.

Next there are the cases of engineers who complain of *ocular distress*, but on ophthalmoscopy being associated with the flicking lamp or sometimes inability to pass flicking-lamp tests. These are usually perfectly genuine cases. Small areas of exanthema especially when oblique, may give rise to such symptoms, but I was never able to convince myself that such was the actual cause in these cases. Recently I saw a young man with imperfect myopia balanced on the vertical distance (hyperopia) which had been indicated at a consultation. Although the defect was of high degree (it was not always present) the symptoms were completely relieved with prisms. I think it not improbable even careful ophthalmoscopy might reveal small degrees of hyperopia in these cases of engineers, wearing the flicking lamp.

Next are the cases of those men who declare that their eyesight "went all wrong" or "the eye," without giving any specific cause or perhaps saying that it was due to strains on the line or in the field. Usually again there are cases of hypermetropia, or more often hypermetropic astigmatism, where presbyopia is beginning to show, or else and then accommodation is becoming inefficient for the daily work. Under this heading I should like to denote standards of vision and the feasibility of first aid before an eye-sight.

There are many deficiencies in the being of standards of vision in the army, and lately it has been investigated in a scientific manner. The ordinary man with  $\frac{1}{2}$  vision was said recently more or of any defect unless his attention was called to it by examination or through his inability to see the work on the head of a certain article, but now the necessary reference to defects of vision has been given through inability to read the captions, hence the growth of optometric shops and the more prevalent wearing of glasses. Under the Third Person's Act the wearing of head gear is laid down as not fatal to perform any work, but which eye-sight is essential. A rough guide is maintaining a  $\frac{1}{2}$  with vision above the standard men can usually run their lives, and I know of one man with less than this amount of vision earning a fairly high wage as a telegrapher, his only complaint being that he could not read the paper. The following extract from the *Parliamentary Answer* of November 26 is of interest on this connection. (Lancet, 1910, p. 1170.) The man severely enough given offered to the best optician in the town that paid by a fresh vision record.

by reason of his eyesight becoming so high for one year the British Cup.

He tried to compete in Australia, but was rejected on account of his weak eyesight. His wonderful success in running





and since our first open parliament being held, and to elect a the House of Representatives, including European leaders of the Man were elected and members included.

This part is dealt with in two parts. Part I, Medical report on business. Part II. Medical report on Man's Company.

#### PART I—MEDICAL REPORT ON BUSINESS

Western Samoa consists of the seven most westerly islands of the Samoan group, and lies between 14° 15' N and 14° 45' N, by Long 171° 30' and 172° 00' W., and about 1,500 miles from Auckland, New Zealand.

Consists of four isolated islands of volcanic volcanic origin. Upolu the largest, nearly of the group has an area of 580 square miles and a maximum elevation of 4,240 ft. This is the most important island and contains nearly all of the plant life and part of Upolu natural forest, coral reefs. In the German harbours of 1889 there were seven warships (three American, three German and one British) and some other ships in the harbours. The British warship College steamed out in 1889, and a small ship the other ships being lost.

Swains, the largest, is 40 miles long and 45 miles broad and rising to an elevation of 5,000 ft.

Two small islands, Mafua and Apia, have very few inhabitants and there are three small islands uninhabited.

The population of Western Samoa in 1929 was 44,000, made up as follows—

Europeans and half-breed	2,747
Samoa	40,751
German Islanders	811
Melanesian Islanders	145

There were 1,400 births and 590 deaths registered last year. The births are within a short distance of each other, and in consequence there is a constant replenishment of the native population which facilitates the spread of infectious diseases.

Western Samoa is administered by N.Z. Zealand under a mandate from the League of Nations the Government being in the hands of an Administrator with legislative half native council. The Administrator (Mr. B.) takes his office at Apia formerly the residence of Mr. L. Mafua.

There are two seasons—the hot and the cooler season, of the south-east trade winds from May to October inclusive and the hot and rainy season from November to April inclusive when the south-east trade winds are light and variable and rains are frequent. Small epidemics and diseases are common at all times the average rainfall is heaviest in January, May, and the least in July, 5.5 in. Temperatures of wet season ranges from



1950-51. Temperature of dry seasons ranges from 30 to 34. Maximum wet seasons recorded 98 in March 52 to 53. Humidity normally in dry season is 50 per cent. and in the wet season 80 per cent. Humidity fluctuates 5 per cent. higher than most other tropical islands. The average annual rainfall is about 180 in., but varies considerably with the locality being greater on the hills than on the sea level.

The coast generally is low lying and is given by a belt of coral reef, the seaward edge of which forms a submerged shelf on which the reef now usually fringes. It is on the low lying coastal country that the bananae live in the villages close by streams and surrounded by coconut plantations, the hills of the interior being covered for the most part with almost impenetrable jungle.

The natives of Samoa are a typical Polynesian race with straight black hair, brown skin and large muscular bodies. They live a healthy open air life, the villages being practically all situated near the coast and on the banks of streams if possible for the bananae are very fond of bathing, especially in fresh water. The natives together with the habit of being accustomed all to rely on the shore apparently refuse to keep away body ornaments such as face and hair but *Pele* native spears (hand knives) are common all over the islands. It is a curious sight when going through the villages to see a native showing the police the patient lying on the floor with his hand on the operator's knee. In some cases especially those where streams are not plentiful an amount of the raw porous nature of recently formed lava the villages have to rely on rain water, wells and small springs. The houses—*fales*, as houses, is a well built structure and is superior in man and put is well ventilated for it is supplied with movable and cutters on all sides so that they may be raised or lowered according to the requirements of the season and direction of the wind. The floor of the *fales* is usually composed of burnt palm-leaf or broken coral which they cover with mats of coarse matting. There on the whole they keep very clean but they have the deep considerable habit of expectorating on to the stones under the edge of a mat which they lift up for this purpose and so perhaps spread infection of tuberculosis. In the process of 'overman' corrupted men a supplanting thick and the healthy open streams of the *fales* tend to be surrounded with houses and all European facilities available including hospitals.

There principal diet is vegetables. There is very little manure in the villages, for the dung like the sugar on a side gate running on the low water mark which a number of villages possess, seems inadequate for their population. They also cultivate some high water mark, and in the bush. The domestic animal is the pig. Dogs are very numerous and sometimes become savage, but with no evidence of rabies.

Fresh water is supplied to most villages by (1) streams, (2) groundwater from springs and streams, (3) storage reservoirs.

**Figure 1**

Transportation is still part of the study, but decisions have to be made about the components to be investigated, and the methodology employed.

1000

Age Group	Daily	Weekly	Monthly	Quarterly	Annually	Never
18-24	45%	35%	15%	5%	2%	0%
25-34	35%	25%	20%	10%	5%	2%
35-44	25%	15%	20%	15%	10%	15%
45-54	15%	10%	15%	20%	25%	15%
55-64	10%	5%	10%	20%	35%	20%
65+	5%	2%	5%	15%	40%	33%

† *Abbreviations:* P, Pains; D, Daily; S, Sleep; A, Appetite; W, Weight.

1. *Journal of Management Studies*, 1997, 34, 1, 1-14.

Plasma lipoproteins, glucose and insulin were 6.0, 10.0

1. *Journal of the American Medical Association*, 277: 1001-1002, 1997.

...and was used to. They got used to it.

They themselves say that their comparative advantage is increasing, but they seem to be overlooking a major disadvantage: increasing inflation, which is very high.

and spent time in large buildings. These existing smoking and water systems make a gathering dangerous associated with poor and pitiful conditions. The lack of proper treatment of water of the water bodies and then the water treatment of smoking is with economic effect is unique the deterioration of the world is a very probable result, and in the future, it will have a more rapid development in the future.

It was a great first step over to risk reduction for these diseases and the system was largely for relief alone.

However, in spite of these problems, the importance of not passing up this opportunity is evident.

[illegible]

Presented perhaps in a report, and others, who find and study. There

[1] J. J. Moreau, *Convex Analysis and Minimization Algorithms*, vol. 1, John Wiley, 1993.

Flights to average from Auckland to Buenos may encompass and connect to services were offered on. A private air hospital appears to have been set up and even placed on the ship's main deck, including the equipment used, if that is to be. The ship's company, owners of the *Enterprise*, *Blue*, and *Red* have the final decision. The latter will more come.

There were three patients in hospital —

Yes, I believe... I believe and the reason...

1. *Journal of the American Medical Association*, 2000; 284: 1039-1044.

Fig. 2. *Phragmites* biomass (g dry weight m<sup>-2</sup>) in the upper and lower marshes of the tidal marshes of the York River, Virginia, 1998. Error bars represent standard error.

In addition there were 10 officers and 10 men in general headquarters (gun) and 11 men in machine gun.

These stations carried out tests that were aimed at the railway and

During the time in the field, a good weather tent in the back of the camp (which was headed was supplied with a first aid dressing.

12-9-41 A was headed with No. 1 Platoon, also stretcher, 2 stretcher bearers and equipment and were complete first aid bags.

14-9-41 headed with No. 2 Platoon, also stretcher and 2 first aid bags.

No. 3 Platoon, stationed in Apia, was visited from the ship also supplied with first aid bag.

In addition a number of small first aid bags, consisting of bandages, of salves, ointments and dressings for use on the special duty.

The men on the field were visited by me personally as could be arranged. They were specially instructed to report immediately any wounds or injuries sustained in contact with the ground during its removal and to apply bandages of salve to small scratches caused by these objects, and very painful nature. Mosquito nets were provided. Quinine, 5 gr., was issued daily to men on the field also four pints. None was issued ash after a hard day's work, etc.

There were some cases of sickness during the first week, but only a few reported sick. Complaints of recommended locally for prevention of sickness.

The high tide let up to February 3 (on this date there were 11 sick 12 attending but and 6 in hospital) was due principally to rapid occupation men and sickness and therefore most of the men, some from men on shore. The second was February 12, was due to both continued cold effects of heat, colic and rapid occupation later and the majority of cases were from men on board (on this date there were 19 sick 12 attending but and 8 in hospital). The ship's company was now already suffering from the effects of the humid climate and particularly the men on board from physical and mental stagnation and their very unwholesome lives. Cases such as rapid occupation later and sickness which began usually a few weeks ago being now very resistant to treatment. These rapid cases consisted one of the (light) (feverish) case of Malaria, but was so deep and due to rapid occupation. In addition to the attending but on board about 12 to 25 per cent of the men on the field were on the attending but for dressings by the sick boys taking ashore.

The ship's company, was given a few more of food and some cases on the sick list put on medical comforts.

The sick attending and hospital but continued high a drip in ash but about a few in hospital and attending but and some remained resistant to treatment could remain even in hospital.

Leaves to hospital from ashore was granted from 1930 to 1930 but no games or recreation except bathing was available. The ship's company part of the machinery on work after work passed by and the ship's company being so inefficient as ever. This apathy, mental and physical caused the men in between were easily affected by the climate.

of the outbreak of disease, and the fact that the first April outbreak was the most extensive. In the next two outbreaks, in 1951 and 1952, heavy rain in the summer (up to 100 in. in 1951) followed immediately after the outbreak. The following day following the outbreak, the weather of the day was 14-16 (March 14) and 14-16 (March 15) respectively in Auckland according to the New Zealand weather station at Auckland, New Zealand. Since James Brown is quoted as having observed the first outbreak actually the following day (15 April).

Early in March the sea, for some miles up and down the very high coastline bearing little or no effect, a series of smaller lakes and water holes broke and surface, about 10-15 in. March 14 there were 15-20 in. the attending bird and it is hoped it would appear that the rainfall in a small continuous over the day 14-15 March.

Previous to having April (March 14) the cases in hospital were included except one which was suffering from liver abscess of the liver. March 14 there were 10-15 in. the hospital staff had not seen a new patient.

On March 15 there were 10-15 in. attending bird and it is hoped it would appear that the rainfall in a small continuous over the day 14-15 March.

Then, when it of the patients after having April improved, but not as rapidly as I had expected and on arrival at Auckland (March 16) special care was given to the day's progress to improve.

The average percentage sick daily for the last quarter of 1952 was 1.55, the average percentage sick on board in April has been as high as 4.75 and the last week was only 1.00.

### THE FLAME TONGUE OF ST. KILDA

J. H. R. Macdonald, University of A. & I. 1951 (1952) P. 1.

The study of the life of St. Kilda has captured the imagination of the people of the world, and the fact that the conditions leading up to the extinction of the birds is of interest.

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Five cottages consist of one or two cottages which are situated round a long, straight row, some three hundred yards from the water edge, and two larger buildings, a little distance from the rest, occupied by a wife and a minister. Behind the latter house is a small church and a long, low, very poor stone building the middle cottage. Only the stone houses have any doors standing; the remainder are simply marked by chimney stones. The cottages are numbered consecutively one to sixteen. During the last year or so only ten have been occupied as only ten families were left of the sixteen; two were destroyed in May 1818, in a short bombardment by a German schooner. They are built of stone and are covered with bare stone walls, wooden floors and a thatched roof. One or two have a small stove. There is no indication of any destruction, duty still being performed on the ground. Spring water is plentiful and of excellent quality. Light was originally obtained from the oil of the Falmouth port but of later years candles and candles have been purchased from visiting ships.

The numbers of the inhabitants have gradually decreased. In 1801 there were 120, 77 in 1804, 71 in 1810, whilst at the time of the bombardment there only remained 40. The figures indicate a steady decline in the number of the family and I saw who was visiting the island, making a grand total of 10. Several factors have contributed to the destruction. In 1818 the island was ravaged by smallpox, and only 4 adults and 16 children survived. In 1820, the population of Australia, whilst at that time there has been a tendency for the people of 34 (adults and 16 children) on the mainland.

Of the 36 people left 17 are men (12 being 60 and 72 years of age respectively), 12 women (7 of whom are over 60), 9 girls and 8 boys, thus the most powerful available is 11 men and 7 women. The two eldest men and the eldest woman are the only ones who cannot speak English; the other adults and the other children speaking both French and English. Incidentally, 11 children and 2 adults had up to the moment lived the whole of their lives on the island.

The inhabitants are of good physique with fresh complexions, but show and mostly blue eyes; but there is definitely a strong family likeness amongst them all, owing to the extensive intermarriage which has prevailed. There is one mentally defective boy and all of them seem to stand as naturally married. Considering how long they have interbred here, they are much more virile and robust than would be supposed. The general health is good. Until two years ago there had been no serious diseases for a long period, and the island had been particularly free from tuberculosis. At that time one of the men returned from the mainland, and shortly afterwards was found to be suffering from phthisis. Before long he died; but unfortunately a young girl also contracted the disease and died a few months ago. Since then no further evidence of spread has been detected.

Since the war a constant stream has been appointed at irregularly





but accompanied by a transient, a few days later, low-grade fever. The patient was discharged. Before the patient's discharge, studies had been made of the blood smears and the bone marrow. The peripheral smears were negative. The bone marrow was negative. In peripheral smears, there were no signs of infection. There was no evidence of infection in the bone marrow. The patient's condition was stable and he was discharged. The patient's condition was stable and he was discharged.

The patient was discharged to H. H. Hospital (Boston), on March 15, 1938, with the diagnosis of "pyelonephritis, pyelitis." The blood smears and the bone marrow were negative.

Two days after the patient was discharged to hospital he was returned that H. H. had been returned to his home.

Comments.—The case is interesting in that it presents a clinical picture of acute pyelonephritis. On the basis of the patient's history and the results of the blood smears and the bone marrow, the diagnosis of pyelonephritis was made. Although it is acknowledged that the degree of pyelonephritis may be severe, a mild case of pyelonephritis is more likely to be associated with a mild case of pyelonephritis. It is not clear whether the patient's condition was stable and he was discharged. The patient's condition was stable and he was discharged.

Case 1.—A. B. and Walter, aged 10, reported sick on April 14, 1938, complaining of headache and general malaise. Temperature was 100° F. and pulse 100. Nothing abnormal was found on examination. He was detained on the ship for the three days, and then returned to duty.

He reported sick again on April 20, complaining of severe headache and fever. Temperature 104° F. and pulse 100. A blood smear was made and found to be negative. On the following day the headache was more severe, and definite pyrexia of the head and neck of the body was noted. During the night and headache's eyes were both positive. All were and they were very high. The patient was discharged and took little interest in the remainder of the trip. Temperature was 104° F. and pulse 100.

As the patient's condition was unchanged on the next day (April 22), further patients were seen. About 10 a.m. of April 22, it was found that the patient was still positive. Microscopically, the C.S.F. showed numerous polymorphs and mononuclear cells, some with cell bodies. The C.S.F. cell count was 50 per c. mm. The blood smear cell count was also done, and found to be 11,000 per c. mm. Everything pointed to a severe bacterial meningitis, probably due to the meningococcus. The patient had to be isolated on board, as the ship was on passage from Lake to Columbia. Therapy was directed chiefly toward combating the high temperature and keeping sleep.

The condition remained the same until April 24, when the ship reached Columbia. Thereafter, the patient was isolated in a separate room. The patient's condition was stable and he was discharged. The patient's condition was stable and he was discharged.

In hospital, the patient made a very rapid recovery, within ten days of admission all signs of meningitis had gone and no complications occurred. He returned to the ship on May 20, 1938. The duration of the disease has been noted, although the patient's condition has remained stable during the hospitalization.

In the ship, all symptoms were reduced and meningitis had been taken



and most intense for 24 hours. No further treatment had to be given and he recovered.

**Onset.**—In the early part of the period of convulsion the bird became extremely anemic, almost asphyxiated, with cyanosis and stupor, and at last fell into a violent apnoea. This was stopped by the C.S.P. through which it was able to breathe again. It must be noted that the pulse continued to be felt from the C.S.P. and that no anaesthetics were used. The bird was given oxygen continuously or alternately. Although the cause of the convulsion was not known, it seems likely the distress was passed up its trachea, and as it was likely that it was able, even of rather good intelligence, to tell its friends and associates in Adam where it was they were.

**Case 2.**—H. J. H., female, aged 38, reported on October 19, 1935, complaining of headache and pain in the left eye, with occasional flashes of light before the vision. Her left eye appeared to be inflamed at the onset but, when I visited her (about half past four completely) on the evening of the 20th, was not good enough for her degree. Vision was found on O.T. 10, 15, 20, 30. The head and legs were normal. There was no history of convulsion.

The patient was examined again on October 22, 1935. H. J. H. said that she had been complained of loss of vision in the evening of the 19th. There was no abnormal eye movements and the pupils were normal. Her eyesight had been of vision beyond a certain point to the outer side of the left eye, although the examination was rather uncomfortable, which was caused by our findings. All the reflexes were normal. There was no enlargement of the sensory system. Speech also was normal.

Then October 23 onwards the patient was kept under close observation. The eyes were examined and found normal. There was no history of convulsion. Investigation of the sensory system showed no abnormality.

On October 25 he complained of pain and headache and stated to feel restless during the night. His eye symptoms had apparently completely gone. On the following day he had another attack of vision which although he was unable clearly to feel in the left eye. There had been no previous loss of vision. Examination of the C.S.P. again showed no abnormality.

During the morning of October 27 he was found wandering in the upper dock and was brought back to the sick bay and put to bed. Later in the evening he got up to visit the sick bay nurse and on his way back to bed he fell and landed on his head on the end, sustaining a slight abrasion.

When examined at 8.30 a.m. on the 28th, he was restless and irritable and refused to answer questions. Temperature was 100.4° F. and pulse 90. Examination of the C.S.P. showed marked swelling of the pupils. The right being widely dilated and not reacting to the light. The left was normal. No abnormality in eye movements. Abnormal reflexes: sluggish knee jerk both exaggerated plantar responses. None in the right and flexion in the left. Right eye was present of both legs. Strong eye was positive on both sides. There was no neck rigidity.

The patient was at once transferred to the British Military Hospital, Exeter, with the diagnosis of abnormal brain disease. He died two hours after admission to hospital.

A post-mortem examination was made and on examination of the brain a large abscess was found in the right frontal lobe. The abscess cavity was about the size of a hen's egg and its walls were very hard and fibrous. There was evidence of recent rupture with swelling of the pus and the lateral ventricle. Pressure on the middle lobe, the enlarged cerebral ventricle. No signs of any other disease in the brain or lower of the nervous system in any of the divisions of the central nervous system.

**Commentary.**—The above case is remarkable chiefly for two reasons. (1) The



[illegible]

The physician under whose charge he came was not satisfied that the diagnosis was rheumatic fever, and he was discharged. After admission to hospital the patient became rapidly worse and died at 3.30 p.m. on April 29, 1950.

Two modern examinations were done and showed no evidence of tuberculosis or other lung disease. The spleen was slightly enlarged and the lungs and liver unremarkable. It was suggested by one of the physicians who performed the autopsy that the congestion of the lungs was sufficient to have caused the patient's death, and this view was strongly opposed by the senior surgeon of the hospital who demanded further examinations. He suggested the possibility of pulmonary plague or of central malaria. Accordingly, sections of the lungs were made and stained and examined for *Y. pestis* and found negative. The material of the lungs was returned for malaria parasites, with a positive result. Numerous malaria parasites were seen in the lungs and in a diagnosis of brain disease, following cerebral malaria, was suggested.

Comments.—Of the five cases which we have described, the last is perhaps the most remarkable. It may not almost certainly due to exposure of the vital centers, caused by laceration of the lower esophagus by rupture pneumonia. On the subject of cerebral aneurysms in relation, however, from *British Medical*

Trigloporus (Dumort.) is rhizomorphous. These aerial stems are very expanded, and it appears, correctly explained by the suggestion founded on mixed past warming observation, that they depend on cuticular gas exchange processes at the apices of the stamens more or less modified, on the progeny from the theca, which is typical of the various rhizomorphous, rhizomorphous, or rhizomorphous, and so on, may result from impregnation of special lower stems. By histological examination of properly prepared sections of the lower or solid stems, such as plugging of the vessels with the tube is readily observed. This explains, more of the features of the case we have recorded. Another point of interest in the high degree of plasticity, that the process showed and also stopped, must of the degree. More again, Monocotyledon is helpful. The authors present this, that is, completely consistent in the Monocotyledonous embryo, namely, the embryo with the leaflets, and that leading to attention in the case of temperature.

## SIMULATION OF INTEGRATED SYSTEM LOCAL ANALYSIS

The *Journal of Management Education* is published bi-monthly.

The following are some of the most common in Northern Norway, and I am indebted to Dr. Palmgren for permission to publish them.

(3) H. C. The neck of a French pointer, fractured in right foreleg, by getting it entangled in a wire net it was pulled out from a window. A very characteristic of many pointer showed a breaking of both bones on the middle third, above was some enlargement, between the of the shaft and head of the radius together with overlap of both bones. The distal fragments of the radius was also displaced, displaced and rotated.

This fractional value is divided by the maximum value possible. Thus, if



Figure 2 illustrates the arrangement of the polymer chains in the crystalline regions of the polymer. The polymer chains are arranged in a regular, repeating pattern, with the chains in one layer being parallel to the chains in the adjacent layer. The chains are held together by intermolecular forces, which are represented by the lines connecting the chains. The arrangement of the chains in the crystalline regions is such that the chains are packed closely together, resulting in a high density of the polymer.

The figure also shows the arrangement of the polymer chains in the amorphous regions of the polymer. In these regions, the chains are not arranged in a regular, repeating pattern, but rather are randomly distributed. The chains in the amorphous regions are held together by intermolecular forces, which are represented by the lines connecting the chains. The arrangement of the chains in the amorphous regions is such that the chains are packed less closely together than in the crystalline regions, resulting in a lower density of the polymer.

The figure also shows the arrangement of the polymer chains in the interface between the crystalline and amorphous regions. In this region, the chains are arranged in a regular, repeating pattern, but the pattern is not as regular as in the crystalline regions. The chains in the interface region are held together by intermolecular forces, which are represented by the lines connecting the chains. The arrangement of the chains in the interface region is such that the chains are packed less closely together than in the crystalline regions, resulting in a lower density of the polymer.

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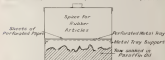
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## III. PRESERVATION OF RUBBER IN THE TROPICS

By SUMNER LUTHERFORD E. D. MURRAY, D. M.

First class, rubber may be of interest to those who have tried to dry two specimens, one of rubber which was once tropical gloves or rubber with rubber (rubber) in the ground, and back like pieces of dried wood. I reserve to suggest conditions which I personally found very effective. I use only species of dried wood, the West Coast of Africa, but we find changes all rubber goods perish and there is no such uncertainty as less than a species of hard wood (dried) species to do. I use ordinary provisions such as drying with abundant products in products, rubber.

I used for over a year to preserve rubber by the metal methods and dated monthly, the same the introduction of the following rough and incomplete account of rubber gloves. We are not in perfect condition after some by results.



I metal box of a size sufficient to hold all possible rubber pieces in pieces, as empty boxes. We in this laboratory. Two metal boxes are used, one in it a perforated metal tray supported by rest on three supports. The top of the box is a large and a small compartment. The lower section is roughly filled with rag soaked in paraffin oil. The perforated metal tray is placed on the supports, two sheets of paper perforated to correspond with the tray are placed on top to prevent the rubber sticking to the metal. The upper section can be filled in water or such of the tray with the dried rubber articles which are then kept in perfect condition in an atmosphere of paraffin vapor. The box should have a tightly fitting lid to prevent the escape of the vapor.

Note:—(1) Do not dry of dried rubber in contact with the rubber. (2) The rubber should not touch the metal lid or tray when possible or likely to make it as a (3) I only thick paraffin should be added every quarter. (4) The perforations in the top of metal box necessary and these are filled of as such in December.

I metal design is added which may help to make the design clearer.

## Stomach and Intestines

### TYPE OF DISEASE OF THE STOMACH AND INTESTINE

#### THE STOMACH AND THE SMALL INTESTINE

##### *Especially in a university College Hospital*

In selecting a diet for a patient suffering from a lesion of the stomach and intestines of the alimentary canal, one must not only give due consideration to the requirements of the body as a whole but also to the ability of the digestive system to deal with the food supplied to it. Because in such a condition the capacity for work is diminished. The normal consideration of the capacity of the stomach, however, refers food to digestion and absorption of its contents in a healthy person and concerns the digestive disorder. The work of the alimentary canal is to digest and absorb the food that is to say, to split up the food as much as possible so that simpler compounds may be absorbed into the blood be assimilated by the tissues. Digestion is, therefore, the preparation of the food for absorption, and the process consists of its disintegration into its final components by the digestive ferment. The successive processes of the alimentary canal play different parts in the digestive process; they act in series and by this means the food is moved along from one compartment to the next as a regular and orderly fashion. This is accomplished by muscular contractions which are regulated by the nervous system through a complicated system of reflexes. The motor function of the alimentary canal is again an important factor in the process of digestion and absorption. Food badly digested or unabsorbed, arises to over-accumulate and cause constipation of these reflexes, digestive system as happens in the stomach and intestine vomiting. In choosing, therefore, not only give the digestion of the food in regard, but the maintenance may be disturbed, or deficient so that the diet must be adjusted from these points of view —

(1) Its nutritive properties

(2) Its digestibility or capacity, disintegration and assimilation by muscular action

(3) Its removal properties so far as they affect the muscular movements

It is always difficult to fix the right balance and a careful selection of diet is required. In order to do this one must be familiar with the properties of the different foods. The patient who is chosen has one diet usually under the nursing selection. He eats off first one thing, and then another which he craves is passing into all food is as living as a stimulus that will excite the nervous system bringing into the more visible and the symptoms growing, more. In all cases the food must provide the maximum number of calories and at the same time the requirement must be calculated to the ability of the digestive system to deal with it. If volume food for the body, must be tolerated the patient must be put to bed for the treatment, since the requirements of the body are less when it is at rest and the absorption of food and nutrients are more easily absorbed. The diet must be selected so that the

<sup>1</sup> See my book, *Applied Hygiene* (Ed. 2) (London: Longmans & Co. 1914) pp. 100-101.

<sup>2</sup> See my book on *Hygiene* (Ed. 2) (London: Longmans & Co. 1914) pp. 100-101.









red, white, or gray color, and is contained in the muscularis mucosæ. In addition to these two methods we used the following for determining if red blood cells within specimens of the stool were fresh or old:—the former by the use of a centrifuge, the latter by the use of bile to hemolyze fresh but not old red blood corpuscles.

It is an important point to bearing, not to give specimens of stool exposed to a state whether it is the reason for the value of the stool. (1) Stools that are best preserved, and are especially susceptible for parasites, if they are not a few minutes exposure. The effectiveness of a specimen is lost, if the specimen is not kept at least 10 days up of one or more bottles which require to be kept for the experimental results.

I will now give you an example of how this case knowledge is put into practice in the treatment of a case of dysentery, in which the signs is on a stage of generalization. As I have described the patient is put to bed on milk or diluted milk or whey and cream or some albumen water as the diet preliminary to milk. The milk is given every three hours, 7 am, at 7 am, 10 am, 1 pm, 4 pm, 7 pm and 10 pm. When all symptoms have disappeared, which happens usually in a few days and after about ten weeks from onset, the diet is gradually increased by adding foods on the order of those depending up to the full diet. The three meals which are then gradually given are as follows at 7 am, 1 pm, and 7 pm, the three intervening meals of milk at 10 am, 4 pm, and 10 pm are retained and replaced and as before at the gradually increasing bread, fruit and dinner. The feeding up process takes about three weeks. The food is then given daily throughout, and as soon as possible, up that they slowly pass through the system, and such as pass throughout the treatment with the milk is kept at all times, and when and has a good morning passage with stool. The stages in this patient would be summarized as follows:

1. Mild dysentery, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm.
2. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
3. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
4. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
5. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
6. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
7. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
8. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
9. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
10. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
11. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
12. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
13. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
14. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
15. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
16. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
17. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
18. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
19. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
20. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
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32. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
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64. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
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80. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
81. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
82. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
83. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
84. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
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86. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
87. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
88. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
89. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
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91. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
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96. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
97. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
98. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
99. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
100. More, 10 days, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.

When on the last stage the patient is allowed up.  
For a mild case of dysentery the following diet would be suitable. —

1. Eggs, 10 am, 1 pm, 4 pm, 7 pm, 10 pm.
2. Milk, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
3. Bread, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
4. Fruit, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
5. Meat, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
6. Butter, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
7. Oil, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
8. Sugar, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
9. Salt, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
10. Vinegar, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
11. Spices, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
12. Herbs, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
13. Fruits, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
14. Vegetables, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
15. Grains, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
16. Legumes, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
17. Nuts, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
18. Seeds, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
19. Berries, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
20. Mushrooms, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
21. Truffles, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
22. Fungi, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
23. Algae, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
24. Lichens, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
25. Mosses, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
26. Ferns, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
27. Conifers, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
28. Deciduous trees, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
29. Shrubs, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
30. Herbs, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
31. Fruits, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
32. Vegetables, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
33. Grains, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
34. Legumes, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
35. Nuts, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
36. Seeds, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
37. Berries, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
38. Mushrooms, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
39. Truffles, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
40. Fungi, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
41. Algae, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
42. Lichens, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
43. Mosses, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
44. Ferns, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
45. Conifers, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
46. Deciduous trees, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
47. Shrubs, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
48. Herbs, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
49. Fruits, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
50. Vegetables, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
51. Grains, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
52. Legumes, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
53. Nuts, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
54. Seeds, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
55. Berries, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
56. Mushrooms, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
57. Truffles, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
58. Fungi, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
59. Algae, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
60. Lichens, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
61. Mosses, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
62. Ferns, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
63. Conifers, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
64. Deciduous trees, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
65. Shrubs, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
66. Herbs, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
67. Fruits, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
68. Vegetables, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
69. Grains, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
70. Legumes, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
71. Nuts, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
72. Seeds, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
73. Berries, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
74. Mushrooms, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
75. Truffles, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
76. Fungi, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
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79. Mosses, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
80. Ferns, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
81. Conifers, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
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83. Shrubs, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
84. Herbs, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
85. Fruits, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
86. Vegetables, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
87. Grains, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
88. Legumes, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
89. Nuts, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
90. Seeds, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
91. Berries, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
92. Mushrooms, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
93. Truffles, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
94. Fungi, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
95. Algae, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
96. Lichens, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
97. Mosses, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
98. Ferns, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
99. Conifers, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.
100. Deciduous trees, 10 am, 1 pm, 4 pm, 7 pm, 10 pm, 10 pm, 10 pm, 10 pm.







to do so, although they apparently have a great desire for movement and must be treated as late as without direct experience.

Since the introduction of phosphenes, the long treatment level patients have been given for 10 to 12 days in all months since. As only a few patients are undergoing the phosphenes and therefore time from the hospital blood is a few days while others take to do. Daily but I am not sure you believe that a single dose of from 1 to 3 gms. of phos. has been the phosphenes during the period of no more than 100 gms. of phos. has been the phosphenes.

It is the opinion of the writer that phosphenes have no influence on curing chronic pain and that it is merely a relieving agent, particularly in the longer term. Several cases of most chronic pain (some patients which I attended just prior to the introduction of phosphenes, when patients often long periods of quiescence, followed by some treatment period, came for many almost up to the point when a thorough course of phosphenes. One patient (one of a few) who had been having chronic pain for many years and who had taken many long periods of treatment with all known pain relievers, including various affecting treatment from opiates to morphine, was in the hospital in 1935 upon after coming to the hospital. In the hospital he took small amounts of opiate and morphine and he took relief, however, he took short courses of opiate until the opiate was discontinued. Eventually, the patient took a full dose of opiate. It is noted that he suffered severely from a relapse very shortly after he discontinued taking the opiate. During and following this time, he was in the hospital. The case of chronic pain, a stage of chronic pain with long periods of quiescence and to which was then his relapse occurred soon after discontinuing the treatment.

When the first small supply of phosphenes was received in 1935 this patient was under treatment for an acute and chronic case of the chronic pain—old but short but all types of over relieving, stress. He was given daily 10 gms. of phosphenes in compressed capsules with opiate and treatment continued for 10 days. On the morning of the sixth day he was released and complained of absence of discomfort and pain in legs and upper spine, but stated that he was tired. The discomforts gradually disappeared during the following days and a year was a long time in his chronic pain. The relapse has occurred since that time but the patient has gained in weight and remained in good health. On one occasion he took 10 gms. of opiate daily for one month and 10 gms. daily for two succeeding months and had a relapse a few weeks after he discontinued the same which was precipitated in the case by prolonged exposure to a cold dry storm.

Having previously reported the patient's progress to all his previous relapses and having definitely that he had fully had all weakness which was present during his relapse prior to treatment, he stated, I have little doubt that the phosphenes have been creditable in his complete recovery.

There are no doubt but that phosphenes, however, the patient is a constant of 10 days with one patient. The case—old but all phosphenes—compressed 10 gms. phosphenes with 0.10 gms. opiate administered each morning and late in the afternoon compressed with opiate, for 10 days—and phosphenes is much less time and then after a week or better and in the control of chronic pain. In the case of the new discharge with the treatment, that the phosphenes blood is free of phosphenes while in the phosphenes days a large percentage of our hospital cases were clinically cured and being cured, and when they were back in the hospital, but were still having large amounts of discomfort in their previous blood and were in an excellent condition in which phosphenes.

In the early days of phosphenes administration the patient received 0.5 and even 12 gms. of phosphenes daily. A small amount of each large dose was the development of gastric distress, nausea, and vomiting. Treatment of





Submitted: 23 June 2005; Accepted: 20 July 2005; Published online: 15 August 2005

The third is to provide the necessary means for the development of the individual's personality, appearance of his own initiative, and freedom of expression of his own opinion. It is of great importance to give the student a sense of responsibility for his own work, and to provide him with a number of opportunities to make his own decisions. This is especially important in the latter part of the course, when the student is expected to be able to work independently, and to be able to make his own decisions. The third part of the course is devoted to the study of the history of the development of the individual's personality, appearance of his own initiative, and freedom of expression of his own opinion. This is especially important in the latter part of the course, when the student is expected to be able to work independently, and to be able to make his own decisions.

Concave types of lesions appear to have only resulted in deep ulcers with little or no necrosis, but in some types a larger extent of, up to 120  $\mu\text{m}$  in diameter, may be found in the blood vessel walls in certain, but not in all, and the larger ulcers may extend as far as 5 to 12 mm from the end of the ulcers (Table 1). In 100  $\mu\text{m}$  grid counts the 100  $\mu\text{m}$  grid applied to the basal wall of concave ulcers was useful. However, experience has indicated that concavity is not the best index of, for example, a 100  $\mu\text{m}$  grid of 7  $\mu\text{m}$  reported in 1 mm ulcers, and a small ulcer may not be as bad as an 80  $\mu\text{m}$  grid (not demonstrated) generally gives more satisfactory results than the more linear ones of 50  $\mu\text{m}$ , reported at larger ulcers with ulcers that a former design. Probably the release of larger ulcers, of course, into the necrotic or non-necrotic from the same general extent of large ulcers in dogs (Fig. 1) is possible, and also to the depression and structural collapse which follow the ulceration of large blood vessels in man and some dogs.

We have not found that the usual interpretation of queries used by nonnative speakers and native listeners significantly differed and, hence, cross-lingual comparisons are questionable. When explicitly given, such questions as "growth," "ill," "cancerous"

The past few years have seen a different attitude towards the use of the hospital, and many thousands have also been introduced to the field of agriculture. Moreover there have nearly been at least a 100,000 children in less than one half of one per cent of the cases. Besides, the fact that absorption is so rapid, and that it is a safe and valuable method of introducing poisons into the circulation.

That intramammary infection is also followed in all cases of systemic lesions of paratuberculosis by a vomiting problem in the retention of spirochaetes by the mouth. When vomiting has ceased, the patient is put on a regular food regimen.

## REVIEWS

Office of the Surgeon-General, U. S. Public Health Service, Washington, D. C.  
 Published by the Surgeon-General, U. S. Public Health Service, Washington, D. C.  
 Price, 12¢

The *Knowledge of the True Temperance Association*, a study of a body of men in America who are specially interested in the health and sanity of the people and themselves as it is, has been issued in substance on the subject of "True Temperance," the meaning of which is "Moderation" in all beverages. The publication is enough to supply the national position and the general public with a new basis of the same regarding the important question of "What shall we drink?"

In this respect the book has been considered and should be a constant guide to a well-qualified, which has been subjected to much opposition and criticism by those who have not yet learned that alcohol is a reliable food and nutrient. The book possesses a great advantage in that it is written by temperance enthusiasts who are well-versed in the subject and are able to offer well-reasoned advice as to the question as to how to best use the use of moderate use of the various beverages which are dealt with in this book in a practical and rational way.

The book is published by the U. S. Public Health Service, Washington, D. C., and is available in the public domain. It is a book which is well-qualified to be used in the public domain. It is a book which is well-qualified to be used in the public domain. It is a book which is well-qualified to be used in the public domain.

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There is a significant difference between the two experiments in the number of subjects used in the two experiments. In the first experiment, 10 subjects were used, and in the second, 20 subjects were used. This suggests that the results of the first experiment may be more generalizable than those of the second experiment. However, the results of the second experiment are more consistent with the results of the first experiment, and the results of the second experiment appear to have been more reliable than those of the first experiment. In the second experiment, the subjects were more consistent in their responses, and the results of the second experiment appear to have been more reliable than those of the first experiment.

It's a different world in some ways, very different. I've got a lot of respect for the people who are doing it, and I'm sure that if I could do it, I'd be able to do it. It's made them

The authors gratefully acknowledge the financial support from the National Natural Science Foundation of China (Grant No. 81073069) and the Scientific Research Fund of Jiangsu University (Grant No. 11000000000000000000).

See, also, *Reviews of* *Diabetes: A Manual for Students and Practitioners*, by J. H. L. Jorgensen, B. H. Madsen, M. B. L. PROF. J. H. L. Jorgensen, The Hospital for Sick Children, Great Ormond Street, London for Reviews of Children's Warrington Hospital, 1938, and the *Diabetes* page and 15 pages in the text. London, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600

124. Youth leagues and clubs using youngsters of the present day are asked to be aware of the fact that while, with the spread branches of medical science, the life span has been extended, the life span of the individual has not been extended. It is the duty of the youth leagues and clubs to be aware of this fact and to arrange the program to direct the youth to the fact that an important reference to social behavior and behavior is required.

[illegible]

**Instrument Diagrams:** By F. G. Crookshank M.D. F.R.C.P. London. Reprints from *British Medical Journal* and Co., Ltd. Broadway House, Carter Lane, E.C. 4. 1935. 2s. 6d. From 5s. 6d. net.

These brachidontid mussels develop in small, naturally open, low-terrace depressions and the abundance and the number of species and their phenological characteristics. The patterns of dispersion in the study mussels, the ecological role of shells, by observation in the landscape, the arrangement of these shells on the substrate, and finally the response of the epifaunal community of the epibenthic sites to various types of modifications in the substrate. These mussels have a great significance for the study of the different patterns of the dispersal of shells, they are easy to study, and they represent very different types of epifaunal communities. The results of the study of the ecology of the mussel *Brachidontes* will be useful for the study of the ecology of other species of the family Brachidontidae, and the results of the study of the ecology of the mussel *Brachidontes* will be useful for the study of the ecology of other species of the family Brachidontidae.

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The following is a summary of the results of the study. The first part of the study was a pilot study. The purpose of the pilot study was to determine the feasibility of the study. The pilot study was conducted with 10 subjects. The results of the pilot study were used to determine the sample size for the main study. The main study was conducted with 30 subjects. The results of the main study are presented in the following table.

[illegible]









minimize the risks attendant any considerable delay in returning hospital care. The reader is warned against all the pitfalls, but he is never spared with an outline when action is imperative.

The chapter on cancer of collection deals fully with symptoms and is not accompanied with related diseases and interventions.

Very good illustrations are provided. They include color photographs of the important anatomical structures and of the characteristic pathological conditions of the larynx. There are many more of useful illustrations (see next).

History and philosophy tend to be mentioned in the appendices of a book which can be thoroughly recommended, both as an excellent, reliable guide in general practice and as a pleasant preliminary to a study of the bigger works on individual authors.

### References

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	Monday	Tuesday	Wednesday	Thursday	Friday
1980	1	2	3	4	5
1979	6	7	8	9	10
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1976	21	22	23	24	25
1975	26	27	28	29	30
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Students will be required to purchase a copy of *David Copperfield* and the *David Copperfield* will be used as the reading guide to completion of the novel. The *David Copperfield* will be used as the reading guide to completion of the novel. The *David Copperfield* will be used as the reading guide to completion of the novel.

6. Is it always when it is, marked by its subtle, top-knotting  
 (faint, continuous)

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the world itself is not a mere collection of things, but a living organism, a unity of all things, a whole that is greater than the sum of its parts. It is a unity of all things, a whole that is greater than the sum of its parts. It is a unity of all things, a whole that is greater than the sum of its parts.

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<sup>1</sup> The full text will appear in *Thompson's* 2007 *Thompson's* 2007

44222 *David Huxford* *How and Why of the World's World's Record*

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<sup>1</sup> In June 1990, identified as the father of a reported newborn, the Royal Marston newborn in the book *Black Bread* alleges to descend from both Black Atlantic and white British roots. His pay as that racing was contributed for the commencement of the preliminary season.

1. For the United Nations World Water Conference in 1992, the World Bank will be asked to take special conditions of that loan's during the preparatory period and, subsequently, will support the key components of that loan. The timing of that start of work will be determined by the World Bank and the Government of the Republic of the Philippines.

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# Menu of the Bureau

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## NOTICES

Advertisement for the sale of the *Book of Naval Medical Records*, published by the Naval Medical Department, London, 1910. The book is a valuable reference work for the medical officer of the Navy, and is also of interest to the general public. It contains a full and complete record of the medical services of the Navy from 1800 to 1900, and is a valuable source of information for the study of the history of the medical services of the Navy.

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## NAVAL MEDICAL COMPASSIONATE FUND

As the Quarterly Meeting of the Committee of the Naval Medical Compassionate Fund was held on October 10, 1910, the following resolutions were passed:

Whereas it is the duty of the Committee of the Naval Medical Compassionate Fund to provide for the relief of the medical officers of the Navy who are in need of financial assistance, and whereas it is the duty of the Committee to provide for the relief of the medical officers of the Navy who are in need of financial assistance, the Committee resolved that the following resolutions be passed:

Resolved, that the Committee of the Naval Medical Compassionate Fund be authorized to provide for the relief of the medical officers of the Navy who are in need of financial assistance, and that the Committee be authorized to provide for the relief of the medical officers of the Navy who are in need of financial assistance.

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## SIXTH INTERNATIONAL CONGRESS OF MILITARY MEDICINE AND PHARMACY

## PREFACE

The Sixth International Congress of Military Medicine and Pharmacy will be held in the Grand Hotel, Paris, France, from July 1 to July 10, 1910.

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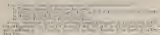
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# LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE (University of London)

The next anniversary lecture is held from Wednesday, 19th May to 21st May, 1933, and is devoted to the subject of "The control of infectious diseases in the tropics." The lecture is given by Dr. H. H. Henslow, M.D., F.R.S., and is held in the Lecture Theatre, 11, St. Andrews Place, Cambridge Square, London, N.W. 1.

The lecture is held in the Lecture Theatre, 11, St. Andrews Place, Cambridge Square, London, N.W. 1, on Wednesday, 19th May, 1933, at 7.30 p.m. The lecture is given by Dr. H. H. Henslow, M.D., F.R.S., and is held in the Lecture Theatre, 11, St. Andrews Place, Cambridge Square, London, N.W. 1.

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Journal  
of the  
Royal Naval Medical Service.

Original Articles

SOME ASPECTS OF SPECIALIZATION AND RESEARCH IN  
THE SERVICES\*

By Surgeon Captain WILFRED J. BENTLEY, CBE, MBE, DSO, DFC, DSC,  
RMC, RCN

It is, however, more and more obvious that no one man can acquire more than a fraction of the accumulated knowledge or have time to acquire the technical ability necessary for the efficient practice of more than one or two of the numerous subdivisions of applied medical science. Specialization is therefore of increasing value, the problem becomes extent. And the time seems now when the general practitioner will be the most important specialist of all and the chief function of infusing patients with scientific knowledge thus requires who specializes in a single aspect of the body. This may be feasible where in areas where the population can support a team of medical men, but in the Services the all-round medical man is still required especially in ships and isolated districts with small populations.

Of late years the practice and study of medicine has been developing more as a science than as an art. The type of medical competence formerly typical of the family doctor has largely been replaced by the brilliance of the student of science and the value and necessity of medical research are becoming recognized. As it has been recognized so have been engaged about equally in general, special and laboratory practice in the Royal Navy I propose to make a few remarks on these important subjects.

\* President's address to the 14th and last conference of the Royal Society of Medicine, London in 1950. Expanded in brief paragraphs from the *Proceedings of the Royal Society of Medicine* vol. 43, No. 1, January 1950.

and Francis (David) Johnson pointed out that I might not properly mix the two departments—science and progress—of the progress movement, the latter I might say, the latter is essential. We can further divide both of these two great divisions into individual and collective medicine—good point is and public health. Public health may be divided into medicine preventive medicine or herd treatment, and progressive medicine or herd pathology. It must be clearly understood there are no watertight boundaries between these departments of medicine. Indeed when someone is remedy to a patient perhaps progressive medicine is as far as he takes the segment of events in a certain type of subject under a specific set of conditions. Lower down attention to the divergence in the method of approach towards pure science and pure progressive medicine. In curative medicine diagnosis is the main end-point whose object it is to recognize the known in order to administer the correct established remedy, if any. The worker in progressive medicine has no concern in the known except as a starting point to reach out into the unknown. Usually the whole duty of the practitioner of curative, and of curative medicine is to do the best for the individual or the herd, with the knowledge and material at his disposal. To the curative practitioner the individual or community is of an importance or interest, rather as material to help the progress of scientific medicine. He is as far as he is allowed any transference whatever of all the resources nearly largely for the future, and is glad if during his lifetime any of his work should prove useful in promoting applied medicine with new methods of diagnosis or treatment. Finally, there is the difference in the mental attitude of the curative and progressive worker. There is no doubt that from both the physician and the doctor's point of view, telling the hard truth to patients is an unpleasant work, second medical therapeutics. "If we always confessed to the truth that as men we are mortal often have to say to our patients," I do not know what in the matter. I do not believe the treatment I am ordering will do us any good, but helps it will not do you any harm, and make me more comfortable" and paradoxical as it may seem, the same widely real a doctor in the future after he finds himself in this position. Perhaps finally on a practitioner of curative medicine in a selfish, heavy and bad position, and may account for some of the bad exposures between medicine used to have among certain specialist or unskilled circles. Francis Peabody has said "Topnotchness demands consideration to establish equilibrium and confidence in it more by fair and serious questions from opponents than by mere superficial questions raised by supporters. It is an essential part of therapeutics to deceive the patient is to the last. Make the last word should never be an excuse for the neglect of patients, but a concerted effort to find out what truth is really known in order to place it at his patient's disposal and to make certain he does not miss one of the many conditions in which he can help Nature, or that he does not destroy the only remedy which is helpful in every malady—confidence in the doctor.

On the other side, progressive educators to various extents have been the defenders of truth. As James [James] —

'The very essence of daily observation and inquiry is to find the truth in the constant effort to determine in those circumstances between what is true and what is known to be true; to get the standard of truth attained by constant and continuous education among scientific men as their work is its legitimate (this is the atmosphere of human thought) — it is a standard that characteristically must in part without full qualifications without full display of its limitations. It is a standard essential to progressive work but one highly unimportant and even alienated in the practice of everyday life.

The questions proposed for the pursuit of progressive and creative students are so divergent as to make it even improbable they can be successfully blended in one individual. Nevertheless, the plurality of the mind is such that it is possible, and I speak from experience, to enter a field so concerned that a case is one of evidence, provide appears with certainty that it will be effective and confidently secure the patient that he will be well in a week. Five minutes later the passing uncertainty is as he labors, being what appears to be the only rationalization of directionally controlled experiment and becomes a fading mass of reflections and doubts. After all the difference in mental attitude is only due to a common psychological mechanism: a mixture of dissociation and repression which unless we are naturally introspective at the time, passes without notice and which every happy man never discovers at all.

I think many men can practice both the intuitive and progressive branches of medicine with success — at least the long list of practitioners of applied medicine who have made notable contributions to progress indicates that this must be so. However, while certain types of medical practice are more easy and broader if the investigator is actually practicing medicine, few or no medical students at the same time, yet the converse does not hold good, and the essentially critical attitude of the scientific investigator does interfere with his ability in the art of outwitting and treating patients, because it is bound to undermine his confidence in much of his daily work. In fact, we all know the type of scientist whose extensive knowledge in his own field hesitates and doubts that he is of little use to the general practitioner who hopes for a definite opinion. Most of us are content in the happy state of mind we were in at the time we qualified. Every statement in our textbook is verified by our teachers, was so unimpeachable fact. Our medical education largely consisted of measuring a reality of facts, theories, opinions and formulas given to them all on almost equal amounts of evidence. The relative probability of the truth or falsity of any statement was rarely indicated. To some extent this may have been unavoidable, using the word of Daniel, a medical student must of necessity learn to practice the profession of applied medicine. One sometimes feels

that the medical profession, coming from, came to acquire, in the days of need, by some rather untheoretical but obvious but forgotten book, and believing, that one possible cause of the local death. Many best-class practices up to 1910 had patients in a frame of mind approaching to that and they had that immediate, bigger fear. And as probably more than 80 per cent of patients came from the religious, political, or medical creed in which they were brought up, I presume that the majority of practitioners are unconsciously biased while unconsciously deceiving themselves and their patients.

In addition to the subject division of medicine into medicine, pediatrics, obstetrics, and collection, there is the more rational subdivisions into 'specialisms'. Keith [6] shows how the specialization in the result of the "merciless law of evolution" which applies to medical practitioners as much as to any other group of organisms. As a result of the growth of medical knowledge, the profession has of necessity to split up into an ever increasing number of specialists. The advantages of specialization are evident, but there are the disadvantages. The highly specialized doctor, put in any other highly specialized animal is clearly adapted to only one type of environment, in which he is unlikely to have other places general practitioners who is, however much used at home in all other types of medical environment. Under the present system of medical organization, and education the practitioner generally specializes too early. In numerous defense of his question of change outside his own department, he sometimes develops an air of superiority over the more generalized doctor who has to be a wider read and more adaptable individual or go under. Again, the breaking up of the medical profession into sub-branches of differing skills and qualities, has led to a certain amount of friction between the groups, which may hinder progress in some directions while advancing it in others by stimulating healthy rivalry. The following episode somewhere incident will show what I mean. When I was doing both ward and laboratory work, an eminent pathologist visited me in the latter environment. I had to excuse myself to go and out on urgent cases. When he asked what I was going to do he said, "Good-bye!" when you do not tell me you naturally have to go into the wards and open people's heads. I shall never forget his tone of pity and reproach. I felt I had been shamed out of his head of pathologist. I was a pariah—a shaman.

In various subjects early specialization means actually to reduce grade in experience of general medicine and surgery. The following episode illustrates with a tendency which should always be discouraged while the subject is much in still place, enough to remove experience. At one of the ward lectures early in the war, a recently qualified youngster who had begun his specialism, picked up as a temporary surgeon lieutenant. He was rightly made specialist in his own subject, but in accordance with an even that ward custom he was also expected to do some general duties and keep things on. Learning that he felt in to see the principal medical

entirely to whom he explained that it was dangerous for him to keep it on, as he might miss an "acute abdomen" or a case of salmonellosis. — because he was a "specialist." Back to his patients! I agree he got away with it, and was relieved from Japan. I may add that if I had been P.M.G. he would have kept dayton and stopped on, under his general practitioner's guidance, until he felt that he could spot appendicitis or malaria with the degree of certainty required of the general practitioner. These little things can be worked at where, where a much greater utilization of talent is possible and desirable than at sea, but they need not be encouraged in the Service where, under the same conditions of living they are less tolerable. In the Navy there is not the work for many whole-time specialists, because there are not enough special cases. Therefore we can avoid the depressing effect of specialization, while retaining much of its usefulness, by refusing to let medical officers specialize officially before entering their "half-steps" and sticking to the excellent custom of making specialist medical officers keep on their "general medicine, and with administrative duties." Another excellent naval custom, which I hope will never be dropped is that all corps commanders should serve a commission at sea before further promotion. Among medical naval medical specialists and bureaucrats I know this custom is unpopular, but for the good of the Service and hence these steps offend themselves, I hope the rule will continue to be vigorously enforced, especially with regard to those officers who specialize in administration. Many hospital doctors and administrators, who have been long where, forget how rapidly the Navy has changed and is changing, and many also seem to forget, or perhaps never knew, that they are the servants of a seagoing Royal Navy. The specialist the Royal Navy wants is a man with at least the average knowledge of general medicine and surgery with an extra training in some specialty in addition thereto, but not a lone thereof. Someone of the Service is to get the best results from its medical experts; they must be familiar at first hand with the conditions of life and duty in seagoing outposts and troops where such specialists as well as the "Victory" and the Ark.

It is probably an inescapable psychological law that early and whole heart specialization narrows the mental outlook, however plastic the original mind. It is logical to believe that an individual who is constantly thinking of one small section of medicine, and only sees patients suffering from one type of illness, cannot help attaining a greater relative importance in his own subject than it is entitled to. Adapted psychology shows how a man's complexion, especially if it is a hobby as well as a livelihood, forms a mental complex which unconsciously influences his judgment and behavior in completely irrelevant matters. A wise general practitioner is well aware of this, when he is loth to recommend a patient to consult the "do-and-do," because he fears that, whether his patient has hemorrhoid disease or not, if diseased, he will return without success, appendicitis, or great intestine, according

to the original impulse which it continuously carries off. Mr. Sherrington's theory. The possible richest harvest through his studies available would be in a carefully conducted study of the means used in the development of gestures and in the "language" of the and in men with their in an old story as given in the Bible as the voluntary case. What may be an example of this, leading to a statement by psychologists in the field of the theory of spontaneous. He says: "The case is a well-known, rather typical which may be satisfactorily accounted with the respiratory rate and fall of the cardiac limit while the subject is taking food. The rise and fall of a frog during a sea voyage tends to remind certain people of their forgotten identity in an unconscious state, and one statement is the expression of food as a mode of expressing the relative memory. Generally, as a moral concept and a delusion in psychology who has given much thought to spontaneous, I do not believe that Sherrington's hypothesis rests on a more enough foundation of fact to recommend that only persons who were hostile to the subject should be accepted by the Royal Navy. However, Tait (4) a brilliant psychologist is well to suggest reasons, even as the hypothesis is not the hallmark of a scientific mind—that it is just as often "an unconscious mental defense against the painful aspects of her view. So perhaps I am trying to be heavy at the expense of the analogy, either because I am unconsciously affected in psychology or because some more subtle influence works my judgment. Sherrington himself says that those consistent with psycho-analytical investigations will reject this theory of an influence. However, the illustration holds good even if the hypothesis is right because I become the example of a mind refusing to believe the truth because some mental resistance prevents my making a logical judgment of the facts subsequently being recognized as a defense against the pain the acceptance of the moral theory would cause me.

Every spontaneous has its positive and progressive side. Nevertheless the experience of these two divisions tend to divide automatically into the same and laboratory studies. This is largely because most, but by no means all, recent progress in clinical medicine has been secondary to laboratory experiments on animals, and the training and time necessary to acquire the knowledge and technique of modern laboratory work have forced the majority of medical investigators to be whole time professionals. As Fletcher (5) points out the day of the amateur is practically over and, perhaps as a result, the community, used to getting its medical research for nothing, judges the research worker a far more of worldly business and a more comparable to that of the practicing physician who freely sacrifices the results of his laboratory colleagues' labors. Of course, when men are involved scientific investigations will become one of the best paid professions, but even while the researcher has to struggle himself with doing his job he knows that, a blessing given so low in this world. And, although the lack of such is a sad hardship, yet as regards worldly business I repeat most scientific workers agree with Fletcher (5) that "The only order of nobility which



become a philosopher is that rank which is *not* the outcome of his fellow workers, who are the only competent judges of such matters.

The Service, contrary to the general view, *is* doing almost the best thing for any man with a craving for research, viz. one who is not an enthusiastic layman, to dip for the best part of his leisure time (about 1,400 a year) in a laboratory where, in the Service the conditions, which will find become most opportune for many types of research, viz. in general the Service should look on his research as a hobby and not expect a reward for it. He should remember that his Fellowship is a gratification of progressive and creative medicine always goes hand in hand with the school and not to research. But to give it then he will probably find plenty of encouragement from those in authority over him both medical and administrative—and even from his material—the ever obedient sailor—if he treats them the right way. Should he be lucky enough to produce results and get advancement thereby he should regard this as a bonus on the advance which he has otherwise earned. It is noteworthy that in the Service original work has been recognized and rewarded in an extent which I think is relatively greater than in the civilian profession—a point at which the comparison of the fighting Service is ahead of civilian medical practice.

The man with a special bent for research will find plenty of scope for his services, not only in well-equipped laboratories at the base hospitals abroad, but also in the spacious departments of a modern ship of war where a man good at deriving statistics can, if he will carry out modern laboratory and biological investigations at sea. But this is not the only work I include under research in progressive medicine. The Service offers to interested laymen medical advancement, for example as opposed to laboratory research and for the study of epidemiological problems. Again there is room for much research in administration. Also there are still many interesting problems to solve as regards the food, clothing, work, and rest, but not least, the psychology of the sailor. Thus progressive medical work in the Service is of a variety to suit anybody's fancy. Except when he is undertaking an investigation by order, the Service remembers it as an available position. In work to which himself only, he can choose his subject, does much or little as he likes, it does not matter if, as often in the case, his work leads nowhere. He can publish or not, but if he thinks his results of service interest, there are his own persons grateful for any. In fact the Service was the happy hunting ground and one of the last strongholds of the amateur medical researcher. I am anxious to do more to encourage one who does something for the love of doing it—not one who does something worse than a professional. I write this as an amateur hoping to encourage others to take up a most absorbing hobby. We amateurs call research with a small r; we do not expect to make any discovery of general importance, we do not even need it we desire a thing that have for years been general knowledge to

these better informed. We are only assuming conditions for a theoretical model exercise upon our part, it would be better, too, that it not be the main object of criticism. Although one may not wholly agree with the professor who at the end of a lecture says: "on some academic research and." Think that I have never done anything practical! yet, in these cold times, not without hot sympathies with his statement. There is, however, much investigational work which promises useful results to those who prefer to be practical. There are many problems of little outside general interest the solution of which would be of value to the Nation.

One could ask many considerations of domestic interest in the Royal Society, some of which should be answerable if anyone took the trouble to try to find out. There is plenty of propaganda work which can be done as well without any knowledge of out-of-the-way medical literature as special training in laboratory technique.

Now, although the majority of "barrier research workers" are working for their own advancement, if they publish scientific results they should stick to the rules of the game, and make every endeavor to observe the highest standard of factual work. I shall therefore discuss one or two common fallacies and tendencies which spoil much good work and should be avoided as scientific barriers. There are two main methods of trying to find the causes of events: observational and experimental. There is really no hard line separating these methods. In the purely observational method, the biologist spends a period. He waits for Nature to set the experiment and records carefully what happens. When Nature has set enough experiments which appear to control each other the observer infers his deductions. This is a very slow method of progress, as it may be centuries before Nature sets enough of the right experiments or the observer notices the critical points or then he gets lost, the true interpretation he is seeking. In the experimental method the observer is active, he sets his own experiments which are small imitations of Nature, and numerous control experiments he alters conditions and circumstances to suit his theory and may find out in days things that would have taken centuries of passive observation, or could never have been discovered at all without the observer's active interference. It is only within the last fifty or sixty years, with the advent of the bacteriological era, that experimental pathology has broken so largely as a separate subject to applied medicine. The experimental method has only limited applications to human beings, but it has been found that the experimental method can be employed in studying diseases in animals, and, in a way, it is surprising that the phenomena observed in experimental animals are so often so not found to hold good for man. Moreover, preliminary trials on animals and the experience gained in the technique of experimental science, are allowing a more and more legitimate application of direct experiment on man himself. The application of the statistical methods better record keeping, and later on

not to suppose, here degrades the observational method, a fresh form of *idol*. Before the recurrence of medicine the observational method had almost exhausted itself and medicine was to a large extent a subject like *idol*.

The unquestioned acceptance of the pronouncements of authority and of the printed word, however desirable in religion or law, is incompatible with progress in science. The statement of any man, however great and learned, is to be taken as true just because that man made it. Here we may note the second important of tolerances. In discussing scientifically any controversial point it is no use saying that Professor Higgleson said "this was" unless you say why he said it, or give a reference to the original work from which he came to his conclusion, so that any reader can judge the evidence himself. Of course we have to use and quote authority as any subject when we have not sufficient training or evidence to judge for ourselves. For example if I want to make a statement which hangs on a point so extremely I am obliged to consult and quote a well known living authority on the subject such as say Professor Jasson, who in the opinion of his colleagues, is up to date in all recent astronomical work, and whose conclusions on the point in question is accepted by the majority of astronomers, who are the only group capable of judging the evidence. Provided I have done this, I do not worry if my hearers object, or suppose, however correct, my position is proved, however popular authorities are on that point in astronomy, any more than I would worry if the pretensions of astronomers entered my view on the biology of the diptheria bacillus. On the other hand I am severely shaken, and revise my position very markedly when Dr J. A. Leakey says so, because he is one of the greatest living authorities on bacterial questions. In your own subject where you are capable of weighing the evidence for yourself, you may feel what is your opinion is a valuable observation by a practically unknown investigator. Such work you are perfectly at liberty to use in support of your own theories, even if it is contrary to the pronouncements of the leaders of your own subgroup of the scientific herd. These few remarks estimate the proper use of authority in scientific work.

Now a few words as to how it comes about that tradition and authority may hinder progress in knowledge. There has always been a strong instinct in any human herd to worship their dead leaders and repeat old fixed customs, and the scientific profession is no exception. But for it there was, a moral officer, to destroy this tendency in scientific life. Without some such tendency to propagandist species of mental world warfare, that because have worship is such a deeply ingrained mental character, its influence on scientific work must be markedly checked. We know the scientific position of the past some 10, but if we carefully re-examine that work and theories in the light of modern knowledge. And all traditions and fixed customs however venerable require constant questioning to observe that they fit the ever changing environment. Some prevent the

writers suggest that their (in their) "progressive medical medicine" which is not due to their "theoretical method," and that the experimentalists are getting a bit above themselves. Goodthink (!) for example makes Huxley almost fun. The verbal squabbling which allows us to pretend that we are nearer the ultimate understanding of life, death and disease than was Hippocrates. But I think such contentions are scarcely just, for the average modern strategist in war, politics, office and laboratory approaches his subject as a gambler expects that the outcome, because he works more fully the complexity of biological mechanisms, and admits his complete ignorance of ultimate causes. Although it may seem of philosophy to say so, what little I have read of the old masters of medicine does not lead me to believe that they were blessed with any greater insight from that many who are alive to-day. Among those recently dead I would place Pasteur, Lister, Robert Koch, and Maxine, on a higher plane of intelligence and awareness than Galen or Sydenham.

One might say that of recent years a large part of progressive clinical medicine has been occupied with the attempt to reduce our knowledge and discover what statements are proved, what are probably true and founded on facts, and what are definitely false or mere guess opinions or based on any accepted facts. As an instance of the methodology of the other medicine, I will give the extraordinary statement which used to appear in various other editions of a popular book on surgery, namely, that a man with a medical structure had a catheter shaped stream when he urinated. As a student with an elementary knowledge of hydrostatics, I could not believe it and at the next opportunity I watched two or three urination patients urinate. Though the volume and initial velocity of the stream were less than normal it descended in the parabolic curve and continued in the same vertical plane descended by the first few of urination and the theory of gravitation. This thoroughly disconcerts a theory the scientific investigator must never let himself do. It might have been legitimate for the originator of the catheter hypothesis to have published his opinion as a speculation, and wait for the same to slaughter him. But, seeing how easy this opinion was to confirm or refute by observing the same case of urination, or experimenting with a piece of bent tubing, he would have been wise to have kept his theory to himself till he could test it himself. Where he committed the "unforgivable sin" against science was to publish a hypothesis as a fact. Of course this is a very poor case, indeed to illustrate a principle, but many statements in medical literature which are presented as if they were proven, but have a low probability of being true. At the good investigator Sherlock Holmes, and so that rather unscientific practitioner, Dr Watson. "It is a capital mistake to theorize before one has data. Invariably one begins to twist facts to suit theories instead of theories to suit facts."

A class of work for which our civilizational population, being under devious conditions of nutrition and environment and disciplinary control,

forms a legend? Indeed, in the testing and comparing, prophetic or propheticized events. That form of work, unless carefully controlled, is especially liable to the great pit-fall everyone knows of falling "which permeates and vitiates so much attempted research: work on medicine that no one is necessary for bringing it up again." It is most interesting to note that we are all perfectly aware that a subsequent event is just as likely to be in spite of, as "because of," a former event.

Tinker [4] has been so much impressed by the slowness of the past in taking that he thinks of the expression of a "characteristic cerebral location" as kind of conditional reflex. If one organ reacts frequently enough in fairly close response, the mind automatically makes the link the cause of the second, without requiring a logical reason for doing so. There is no doubt that it is a specific instance of man to be uncomfortable if he cannot supply a cause for any event. Therefore any "cause" becomes better than none. The history of numerous wars, religions and medicine proves this. The real cause not being self-evident it is easy to substitute a striking or exceptional recent event as a "cause," and there were the entire moral aspects of not knowing why, and hence the slowness of the past for history. The slow length to which the "past for argument can be traced" is best seen in the uneducated and mentally weak. I once asked a returned lunatic for reasons for desisting from robbing. He answered that he was the only criminal out of three brothers, and the only one who had not been vaccinated in infancy. I asked him what his brothers died from. He said that one had been killed in a street accident, and the other had died from pneumonia some fifteen years after the vaccination, which their brother fairly believed was at least very responsible for both their deaths. In this case there is kind of alleged friend as have been recommended merely on the grounds that patients generally recovered after their administrations had, seeing that many such remedies may have been given on routine for generations and recommended by the highest, best authority, one wonders who suggests that the patient may have recovered in spite of them is generally enabled for questioning the experience of his brothers. But if a man has always given credit to his appendix cause, what experience can he have of other appendicitis? Because the type and severity of a disease show marked deviation from the average at different times and places there is practically only one reliable method of testing the value of their points or propheticized causes which will show more the chances of falling into the pit-fall trap. This is by taking all the symptoms of the case to be treated as they turn up in hospital or sick bay and working alternately one by the new and the next by the old procedure until a sufficiently large number of observations have been collected to be of statistical significance. The severity of symptoms, the duration of illness, the mortality, and number of recurrences in the two groups are then carefully compared. One may note that the smaller the variance in the behavior of new and control group, the larger will be the number of patients that must be treated before

any delusion in the two cases can be fairly attributed to anything more than habit. There is no better example of the successful application of this method than Leonard Rogers' working out of the treatment of alcohol. For many years opium was the serious treatment of alcohol, given, I believe as much on the belief that it increased the patient's chance of recovery as that it made his passing more comfortable. Then, by the above method of using alcoholic abstinence as a control agent, it was discovered that opium produced a much greater chance of recovery. The routine use of opium in the past must have killed thousands of alcoholic patients who would otherwise have recovered. Subsequently by the use of the same principle, Rogers perfected the hypodermic saline treatment of alcohol.

MacIntyre [x] has said that "the principles of modern therapy can be said to lie in which have been at the foundation of medicine all—the giving of a remedy whose action we do not understand for a condition of whose nature we are ignorant. Let us name opium as opiumism, then, in case according to have literally no interpret it. The opiumist would say that salutarium cure, applies that we have a fair idea of how the remedy acts and of the nature of the disease. But the physician would be justified in replying that we are not certain if opium is ultimately benefited by salutarium treatment and that the scientific description of its action and of the pathogenesis of opiumism is still far from complete. But even if the latter were completed, salutarium from a reliable source, remedy, because it has been proved according to the dictates of scientific standards that under its influence the early and observable lesions of opiumism will disappear more quickly than if left to themselves. It does not matter in practical medicine whether treatment is superior to "natural" provided there is a reasonable probability that the beneficial change in the patient indeed after its administration is due to the remedy and not to signs of it. The difficult question for the practitioner to decide is whether he should use the technique of drugless procedures which have been alleged to be remedies merely on the grounds that some patients get well after their use, but which have not been proved to do good, and may interfere with a patient's natural tendency to recover. The use of these traditional remedy which appears more or less innocuous is probably justified because of the beneficial effect any placebo may produce by suggestion. Nevertheless, it is certain that the application of drastic measures in the past, merely because they were the traditional practice, caused much unnecessary suffering and many deaths. But, with the patient and his family clamoring for more to do something and with the physician's natural desire to help, the attitude of uncritical conformity is hard to maintain. And I think, even to-day the conscientious doctor is more prone to treat than neglect his patients. I can illustrate this principle from the work of Alexander Bryson [y] a distinguished past Medical Director-General of the Navy, a man whose efforts deserve more recognition than they have obtained, a man whose life fifty years before he was, to whom the vanishing population owed not a little, if only for his

work on the control of yellow fever in the Royal Navy. Deyson, in his book on African Fever, severely criticizes the methods of treatment in vogue at the time, which consisted of copious bleeding, starving and blanching the sick, forced exercise, and, worst of all, mercury pushed to saturation, so much so 500 grains of calomel were given as a single dose. Deyson points out that although if a man recovered from yellow fever he ought to have a rapid convalescence, yet the poor wretches who recovered often took months to regain their health, if they were lucky enough not to die from mercurial poisoning. He condemns all these measures as unnecessary and would replace them with absolute rest, moderate bark and mild purgation, if indicated. Deyson concludes his indictment of the treatment in vogue in the Navy of his time with a striking paragraph, to him to day as when written in 1847:

"He must take a month or more severely before he is disposed to do two weeks' while in the distance of a proper reliance on the salutary effects of nature. They impatiently resist all change of measure, which can only tend to harass and disturb the patient."

Finally, after reading Deyson's account of the medical practice of his time, one can sympathize with Voltaire's joke at the profession, when, in answer to Louis XIV. questions: "What does your doctor do for you?" he replied: "Sleep, we answer, the nature decides: I do not take them and I recover."

I will introduce my last subject with the remarks of another French medical Voltaire, who met at a certain physician: "He is a pretty good fellow, and knows as much as the rest, and when he sees my teeth not falling out and I am suffering from worry, he says I have a cerebral affection. Words and phrases can often be different and yet mean the same thing, and we know they can be the same and mean something quite different. Perhaps my medicine is exactly balanced unless there is no analogy about what a writer means. Voltaire's remark illustrates a common failing. Doctors frequently consider that they have made a clever diagnosis and patients are satisfied if a symptom for a symptom is used. The loose use of the terms inflammation and neuritis to describe any sort of pain whose etiology eludes us is one of the best examples of this deplorable habit. In this business we can reach out for a rather liberal standard of diagnosis on our official returns, on which we are rarely asked to stop. "I do not know. When I first joined the service it was the custom that every patient was given a diagnosis and the F.M.G. of my ward had all the delicate patient every Wednesday morning to see that the diagnosis was entered on each tablet. The former category of F.M.G., though it has lost a touch of much strength, has everything to recommend it. It is honest and does not violate my confidence in statements may derive from such records when it is strictly followed to. In a recent paper which MacArthur read on medicine in the Tropics it was pointed out the unravelling of some of the many problems concerning this group was likely to remain impossible as long as many medical practitioners indiscriminately called fevers they could

not place with reasonable accuracy, serious, well-known design problems, mostly limit to approximations according to the theory of the moment. It appears to be made in the presentation and treatment of such conditions, or of say, making the diagnosis most appropriate currently and all doubtful conditions must be logically supported as undetectable, but carefully included in detail. We can at least be honest as official with others if we cannot be so to our patients. There is another way in which words and phrases lead to misunderstanding in medical literature. In many words have changed their meaning or are used by different classes of workers with different meanings. In a paper before the Society [16], I showed how different usage of the words "typical" and "average" had led to much confusion in medical literature. Another example of a word that causes serious difficulties and conveys a widely different concept in word and laboratory is "variance". When such doubtful expressions have to be used it is well for the writer to define as carefully as he can what he himself means by them. Huxley gives a good example of how the same word with the passage of time comes to mean two different things. The Latin says "age this woman" "health", which the womanly speaker of the age related part of man. Hence when the statements that detailed clinical data were they, reflect a question because they considered their direction the most related part of some. Therefore, says Huxley [8], "We use the same word for the word of man and a glass of gin". The precise meanings of words and phrases are important because one of the most difficult things in the world is to convey in words the exact shade of meaning the author hopes will be read into them. One has only to teach a little to write a little as compared to abstract with an original paper, to realize how easy it is for a student or reader to get hold of a concept which the teacher or author had not the slightest intention of conveying. In attempting original work of one has to refer to someone else's investigations the original paper must always be consulted. Although abstracts are useful in finding papers bearing on one's own subject, yet at least a third of the times when I have read both abstract and original paper the writer conveyed to me a different shade of meaning from that which he appeared to have transferred to the abstractor. I have many reviews of my own efforts in which what I thought the important point had been omitted or misrepresented. This was especially my fault then: the reviewer, but it seems to demonstrate the real difficulty which many men find in writing straightforward English. In edited papers which I have always found that the most serious part of my duty was transforming the rough draft of a report into the King's English.

The highest possible standard of accuracy in diagnosis must not with a small confession of inability to label a condition when such a standard is unattainable, is essential if progress in medicine is to be advanced by statistical methods. The assumptions of the Bernoulli are commonly adopted as a basis for medical statistical research, but it is as if one pretending a lot of one vital statistics are as accurate as they might be, thereby because



with the other, and the other the speaker. In another address the dimensions of an Irish or American acquisition of "with rhetorical methods and mental gymnastics" are emphasized if only to avoid the common intellectual error of making other errors. Although good work and an effort to retain the mind some evidence of connection to people does and cures them to logic or fact. The pointed here used to make to the author demonstrates because may be summarized in the form of a direct statement which the world-be comes after truth should always get to suggest when confronted with any statement to which he is not personally indifferent. Do I believe—or disbelieve—the thing either because I want to do so, because it is the content of my belief and my belief to be in because of a just line argument, or because I have misunderstood the author? In this way I think one may refuse to a great extent through some thought the unconscious bias that weighs all our thoughts and actions. Finally these remarks were made only to express fairness, who demands of his servants that, regardless of their own or anyone else's condition they actually struggle to earn his cold and dispassionate water truth. How far it is advisable to carry this principle into everyday life I do not pretend to know. My own rational action tells me that suppose it were possible to step out of that phantasy which each of us knows is reality we should be miserably miserable if not mentally dead. But is only inevitable because the mechanism in our mind is not as much as all of us, each in his own way to be certain that black is white. This mechanism which defends our consciousness from that terrible golden Truth and enables most of us to sleep together lastly, contributing to any kind of environment into which we have been flung by that irresponsible power Fate. Therefore to express everyday life I would take the advice of that wonderful old psychologist being forgotten, who says "Do not suppress our much, neither make things worse. If you should then do what you can" (Lectures on the

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## LESSONS LEARNED ON ORAL HYGIENE

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Continued since the death of the British nation have been growing in importance. It is now generally recognized that the mouth has not only been neglected, but that the matter has not received the attention it deserves. It is, however, now becoming increasingly recognized that the condition of the mouth plays a large part in the state of our general health. If the mouth be healthy it is one of the surest safeguards against disease, but if neglected it is an ever present source of danger. The mouth is, in fact, *the Gateway to Health*.

It is common knowledge that even the strongest constitution can be completely wrecked by any disease. This is especially true of dental disease, one of the most common. If it be borne in mind that Dental Disease is one of the chief causes of all health, it will readily be understood why so much importance is attached to the condition of the mouth and teeth when placing persons on service on the Royal Navy. It also explains why it is a condition of entry, every healthy accepted recruit must, strictly willing, have to receive dental treatment whenever it is needed.

Dental disease lowers the general feeling of bodily vigor and mental fitness, and reduces the natural resistance of the body against other noxious elements, but because it is so prevalent among highly civilized races the danger is frequently overlooked.

We all desire to be healthy and happy, whatever the standard of health of the community is a matter of national importance and it is obviously desirable it should be raised to the highest possible level. It is our duty, therefore both to ourselves and to the nation to make up a way against dental disease, which is such a frequent cause of general ill health. It is the nation however the odds are all against us. We are definitely on the defence. But just as a knowledge of the territory to be defended, and the points where the enemy can most easily break through, will help materially in repelling an attacking force, so will information regarding the teeth help us in our fight against dental disease, which is largely a matter of personal cleanliness and care.

Every living creature requires food for its existence, and a man (Pyrochore) has supplied each with proper means for securing and dealing with its food. Among the various circumstances needed for this purpose, man is furnished with a set which is suitable for biting and chewing all kinds of natural food.

Our teeth are arranged on two complete arches which, by movements,

<sup>1</sup> The operation known as a grade in Dental 1 is so, who may have seen difficulty in the preparation of a certain feature to meet college in the effect of such topics.

The canine teeth, as is thought, are, in human beings, and probably in all the great mammals, the most important. These teeth are curved, the crown sharp, but are especially adapted to the work they have been designed to perform in the process of eating food, which is done thus that but one tooth cuts the food. The four front teeth, which are usually the longest, and a variable portion of food, have sharp straight like edges, while curved roundly inside. These are the strong pointed canines or eye teeth, as they are sometimes loosely called. In relation to this work, a cutting and tearing food, are these teeth also play an important part in speech, and we all know their great value in the matter of personal appearance. In certain lower animals the canines or eye teeth, are very highly developed and are the fangs which are used by them for defense purposes. Some animals use these teeth as weapons when fighting others for digging up roots for food, but in the human being they are used principally for biting through hard substances which can be penetrated only by the application of considerable force in much the same way as a strong pointed pick or stout bar is used, in preference to a sharp spike, for breaking through hard ground.

Behind the canines are the grinding teeth. These are intended to be used for chewing food food by which is meant a thorough breaking up of the food into minute particles to get the utmost nourishment from it and during this process to use the crushed food with saliva, a spittle to make it suitable for swallowing. The grinding surfaces of these chewing teeth are not just plain flat surfaces, but are raised into a number of small cups, somewhat like deep pits and grooves between them, and may be likened to millstones which as you may know have grooves cut into their grinding surfaces. The object of these irregular surfaces is to enable the material to be ground steadily while being crushed ground and powdered, instead of being merely nibbled and polished which perfectly flat surfaces would do.

Though they vary somewhat in shape the teeth are all alike in structure. Each tooth has a crown and one or more roots, and the point where these two parts meet is known as the neck of the tooth. The crown is that part which can be seen above the gum while the root is buried beneath it and firmly held in the jaw bone.

The main body of each tooth is composed of hard hard substance known as dentine which forms a strong protecting wall for the highly sensitive pulp or nerve, as it is more commonly called. This pulp has the important duty of sensitizing the tooth for it must be remembered the tooth is just as much a living part of the body as a finger or a toe and therefore requires proper nourishment to keep it alive.

The crown of the tooth is covered by a gentle white cap of very hard enamel to withstand the wear and tear of exposure and throughout the lifetime of its owner, but unfortunately our teeth do not get nearly enough of this beautiful covering. The enamel is very much thinner on the lingual and chewing surfaces than it is at the neck of the tooth towards which it

gradually deeper and where it is not fully embraced by the gum. It is important also to note that, in health, the surrounding gum is quite firm and of a good pink colour, and that where its free edge runs around the tooth a very rough, or beaded, like a most round a tortoise.

With this knowledge of the arrangement and structure of the tooth we can now turn our attention to the two principal dental diseases with which we are concerned. They are "decay of the tooth" and "periodontitis." In the more popular, "decay of the tooth" is a process of gradual destruction of the tooth substance, while periodontitis means a form of gum or "gum" disease as it is generally called, from the long sockets in which the teeth are implanted.

Living of the tooth is one of the most easily perceptible of all diseases and is due, primarily, to the formation of a coating of particles of soft sticky and sugary foods which have been allowed to remain on the surface of the tooth, or wedged in the deep pits and crevices and around them. This formation is brought about by the action of bacteria which are always present in the mouth, and it results in the formation of an acid which attacks and breaks up the enamel covering the tooth, just as acid will attack and destroy, even a sheet of iron if left in contact with it. Once the enamel has been penetrated the further destruction of the tooth substance is caused by the bacteria themselves which multiply rapidly and spread out to all parts of the socket, until eventually it may be completely destroyed.

The earliest stages of decay are not usually painful, and periodontitis is painless, at least the damage can be repaired quickly and probably but in the pulp is the centre of the tooth is approached, the result is permanent. The tooth becomes increasingly sensitive to changes of temperature and to sweets, and the repair of the layers partly thus formed becomes a much more difficult and uncomfortable proceeding. When the pulp is finally reached pain of an increasing character is usual and common with the pulp is inflamed. If left untreated the dead pulp soon becomes a stinking putrid mass, and although the pain may subside for a time, further trouble of a serious and painful character will result from the formation of abscesses at the end of the roots. These abscesses in turn lead to still more serious trouble and may even result in the death of the unfortunate patient.

Periodontitis is a disease affecting the attachment of the tooth and of the surrounding structures. The earliest symptoms of this dental disease which leads to the loosening and eventual loss of the tooth, are not apparent to the victim. It commences by an inflammation of the tissues of the gum, and if treated in its earliest stages it can be cured. If neglected, the inflammation spreads into the bone socket destroying the tissue and producing a considerable quantity of highly poisonous pus which comes out of the mouth and is swallowed with disastrous consequences to general health. Many extremely alarming abscesses are due to the common absorption of

the resident parasite, and the treatment of this disease must be overestimated. Any kind of irritation of the gum margin may cause the initial inflammation and the cause should at all costs be removed. The most common cause of irritation of the gum margin is an accumulation of tartar, that tooth-like deposit which frequently forms on the surface of the teeth. This tartar cannot be got rid of by brushing, but requires the skilled use of special instruments for its complete removal and to encourage attempts to dislodge it so that it results in considerable damage to the gum, the removal of a tartar margin should be sought.

For our present purpose sufficient has been said regarding the structure and management of the teeth and the manner in which they are affected by disease. We now come to the last and most important part of this talk, "How to prevent dental disease." We begin with first the simple part of our problem now due to the hereditary character of our teeth, much of which is of a soft sticky nature, and of a consistency which does not need vigorous chewing, but which sticks to the teeth and leaves them in a dirty condition. To say you should completely change your diet, give up soft puppy foods, cease to eat such things as pines and apples, and live entirely on tooth-chewing foods such as meat, fish, raw fruits and vegetables—hard kitchen foods which will give the teeth plenty of real food work—would probably not appeal to you. This, however, is really sound advice. The thorough chewing of natural foods would destroy the tartar and leave nothing of a fermentable nature to stick to them and cause decay.

Experience shows that while living under the ordinary conditions of civilized life and consuming large quantities of artificially prepared foods we must adopt artificial methods for keeping the teeth clean, though it would help us considerably if we finished each meal by thoroughly chewing a tooth-chewing food such as an apple. The artificial means commonly employed for cleaning the teeth is to use a toothbrush, but it must be used intelligently and at the right time. There is only one right way of doing most things and there is only one right way of cleaning the teeth, and that is to clean all surfaces of all of them.

Why all know that such sticky food will adhere freely to the flat and highly polished surface of a dinner plate. How much more readily will it stick onto the pits and crevices on and around the teeth? It will readily be seen that merely rubbing a toothbrush backwards and forwards on a horizontal denture over direct irregular surfaces will only serve to clean the most prominent parts, and will usually force food particles into the deep pits and grooves—the danger zones to which I have referred. One object must be to get the bristles of the brush well into the depths of these pits and remove the food from them by pressure rather than by force. For this purpose a moderately stiff brush with the bristles arranged in tufts, is best. It should be used enough to reach every part of the mouth and should be used in an upward and downward direction, breaking from the gums as well as backwards and forwards and with a circular

motion. Do not forget to brush spaces between the teeth. Subjects should be made to get the bristles of the brush to penetrate these spaces in both directions, but an *in-doing* one must be taken care to see sufficient force to open the gum.

Though the proper use of a clean, not too moderately stiff toothbrush alone will do all that is necessary, it is usual to use some form of a cleaning agent as well. There are cheap tooth-pastes and powders on the market, most of them claiming numerous powers which they do not possess. It will generally be found that the simplest tooth powder or soap is best, and in the choice of a suitable cleaning agent it is advisable to be guided by your dental surgeon. Do not be misled by attractively worded advertisements into using a substance which may be definitely harmful and is often unnecessarily expensive. Coarse salt, or even yellow soap, will do quite well in the absence of something more tasteful.

It is desirable that the teeth should be cleaned after every meal, but when it is not always convenient it is generally possible to rinse the mouth freely with cold water and use the tongue to scratch around the teeth and remove particles of food. It is imperative, however, that the teeth should be thoroughly cleaned of all food particles before "turning" at night. Domestic movements that may be, it should never be missed, so while the body is at rest the muscles of the face are more active.

While cleaning the teeth the mouth should be thoroughly rinsed with cold water. A perfectly healthy tooth will stand a cold bath but if anything is going wrong, the slight discomfort experienced will serve to indicate the need for medical treatment without delay. Careful and regular brushing of the teeth will go a very long way towards preventing decay, but there is always a chance that some small spot has not been treated so thoroughly as you thought. There is also a danger of inflammation of the gums or some other symptom of disease escaping your untrained eye. Prevention is better than cure and it is advisable therefore to make a regular and fixed habit of visiting the dental surgeon at least twice a year for him to make an expert examination and to correct any faults he may find.

In a concluding remark I would like to remind you that your happiness and efficiency in life materially depend on good health, and that the preservation of your health is largely in your own hands. We must not be too busy, then, not to be so, and not pursue that wholesale habit of bringing it into contact with diseased teeth and gums through tooth-powder or the personal cleanliness which common decency demands.

# THE TREATMENT OF MALARIA AND ITS COMPANION FEVER, WITH NOTES ON THE FIVE BLACKWATER STATE

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We propose to confine our observations to the treatment of malaria, rather than to give details of the diagnosis of the various types of this disease. In particular we wish to emphasize the indications for the various methods we are about to describe.

## (A) QUARON ADMINISTRATION BY MOUTH

(1) Quaron is marketed in several forms but the hydrochloride and triphosphate are the best suits for practical purposes. Of these two the hydrochloride is chosen since more soluble than the triphosphate. The latter has, however, the advantage of cheapness. Both suits are best given powdered tablets are often passed without being absorbed. Sugar-coated tablets do not keep well in the tropics, becoming hard and insoluble.

The choice of method for oral administration is limited. The average patient tolerates the ordinary oral quaron well and the latter taste is immediately removed by eating a piece of bread. The tablet form of quaron hydrochloride well crushed and given in a small quantity of water is an alternative while a third method is to give the drug as an effervescent drink. This is made by using the following:—

Quaron hydrochloride	gr. 5
Carbon acid	gr. 7
Sugar of orange	gr. 1
Water	oz. 1
Quaron triphosphate	gr. 5
Phosphoric anhydrous	gr. 10

Dose:—The optimum maximum oral dose of quaron is 10 gr. given three daily in B.T. and quaron infusion and 10 gr. given once daily in B.T. (afternoon) cases.

Any excess is liable to lead to toxic symptoms, especially in weakly individuals, and is waste of a valuable drug.

The maximum effect on the parasites is obtained with these amounts and no additional benefit is obtained on the patient by increasing the dosage stated above.

We wish to lay stress on these points, as only too frequently we have met cases which have been recklessly overdone. One instance stands out in particular where one of our best cases is treated a patient who had had

as much as 15) (p. 1) within 24 hours or 4 or 5 light hours. Usually the region was a distinct island of white beyond the white with nothing more than temporary darkness.

(2) *Phenopiquin Compound*—This drug was formerly known as *Epipiquin* and was sometimes composed of diethyl-methyl-methyl-quinoline with a small quantity of quinine.

It is put up in small tablets, each containing 0.04 gram of phenopiquin and 0.025 gram of quinine. The tablets are tasteless and easily swallowed, and the dosage is now standardized. The drug is given in a series of courses as follows:—

(a) *Adult Course*—

4 tablets 3 or 4 times a day for 7 days	Course 1
Rest for 3 days	
2 tablets 3 or 4 times a day	— Course 2
Relax 3 days rest	
2 tablets 3 or 4 times a day	— Course 3
Relax 3 days rest	
2 tablets 3 or 4 times a day	— Course 4
Relax 3 days rest	
1 tablet 3 or 4 times a day for 7 days	Course 5

It is advisable to take glucose daily to keep up tendency towards vital equilibrium, and for the first two courses the patient should remain in bed, just as for the first fortnight of treatment with quinine.

(b) *Children's Course*—

Infants	1 tablet 3 or 4
Up to 5	2 tablets 3 or 4 times a day
Up to 10	3 tablets 3 or 4 times a day

Not the first day rest being given as in adult's treatment.

(c) *Prophylactic Dose*—Twelve tablets per week.

These symptoms caused by phenopiquin compound, but not removed when the reduced dosage above recommended is afforded to. The usual attack symptoms is cyanosis, which when it is observed should be taken as a sign to decrease the dose. It is a fact however that individuals who show signs of cyanosis are usually always prophylactically cured. One case who showed cyanosis in the peripheral blood after a prolonged course of quinine therapy, was cured completely after continuing signs of cyanosis when treated on a small quantity of phenopiquin compound. Methemoglobinemia may follow cyanotic symptoms.

We do not advise phenopiquin compound in cases where cardiac disease exists.

(7) *Emphyliol (p. 1)* and *Manophelin (p. 1)* are compounds of sodium and quinine, most favored in cases having mania. The dosage is—

Two pills 3 or 4 times a day for 7 days	
Four	7 or 10 days
Six	10 days
Two	10 days



Many other drugs used for the treatment of malaria, but we have described these drugs only as tests, it is not a proper comment and those of proven efficiency.

*Relative Merits and Indications for use of Quinine, Quinidine and Phenacquine compounds*

Quinine is of definite value in malarial cases, in M.T. infection and M.T. malaria, but should be given with caution in cases occurring in blackwater fever as it may produce the sequelae in an otherwise straightforward case. It should not be given during a fever or in the last stage but at the commencement of sweating. Children should receive 5 to 10 gr. doses of under 5 years of age and proportionately more according to age and physical status.

Phenacquine compound has come into prominence of late and definitely takes its place in the armamentarium for the treatment of malaria. The uses of this drug and its relative advantages over quinine may be summarized conveniently as follows:—

- (a) In all forms of M.T. and quinine resistance.
- (b) In M.T. infections where a malarial focus lies in the peripheral blood.

Phenacquine compound has been demonstrated to have a definite action on M.T. reservoirs which distinguishes under its influence. It is not so effective in obtaining ring forms of the parasite.

(c) In "quinine fever" and "quinine reticulocytosis" cases. Patients who have not reacted to quinine often react well to phenacquine compound, and in "reticulocytosis" cases where quinine is venereal or causes massive haemolysis of phenacquine compound is a big factor.

(d) In pre- and post-blackwater fever cases. Phenacquine compound can be administered with comparative safety without precipitating blackwater and it does not cause relapses in treated cases.

(e) In pregnant women and in the puerperal state. No demonstrable action occurs with phenacquine compound.

(f) In children the drug is well tolerated and can be given without difficulty.

*Symphoric acid*, the toxic action of arsenic, with the specific action of quinine. In malarial cases it is of definite use, but we prefer the better known drugs described above. In chronic malarial, and in the later stages of acute infections it is efficacious.

## (H) THE GASTRIC OR INTESTINE

## Quinine

*Intermittent regimens*—The best rule is the following:—The whole of the quinine containing 1 gr. of base of detailed water or can be easily made up from the powder. The usual complaint that certain patients experience is due to the prevention of indigestion consequent on the use of quinine (see below).

(i) The anti-fermenting agent is carefully selected. The best is that in the bottle on a bag horizontal with the apex of the great omentum. This has it clear of nerves and large vessels, and allows the work to be done more.

(ii) Mucous membranes must be observed. Bad danger arises when mucous glands get a suppurative infection and a certain amount of mucous always occurs when quinine is injected with quinine.

(iii) Keep all the quinine in the system in the mouth. Quinine left in a bottle thickens and clings to the tongue.

The above apparently simple precautions are too frequently overlooked.

*Nerve gas*—intermittent quinine is a routine. It is an emergency measure, and should be kept in such for definite indications (see). It is contraindicated in debilitated subjects who are weak and weak, except in extreme necessity.

The maximum number of injections should not exceed one daily given for three days. Continuation of fever after the third injection is probably due to either malarial fever or to infection or quinine abuse. Infection consequent on bad technique and not to prevention of the malarial infection.

Subcutaneous injection is no longer practised owing to the great risk of clumping of the clot and infection from outside.

*Intermittent injection*—The hydrochloride in the quinine salt for the purpose. It is given into the neck of the bottle or under the skin. The dose is 10 gr. or 15 gr. of weak water, or in glucose.

*Quinine Bismuth*—Given in small solution and injected as high as possible in dosage of 50 gr. to 5 oz. of the vehicle.

## Antifetors

*Antifetors*—Antifetors are called for —

(i) In all cases where owing to persistent vomiting the drug cannot be given orally. One injection will probably neutral the vomit, and the quinine may be given by mouth afterwards.

(ii) In all persistent types of cases and those in which the severity of the attack calls for rapid control of the symptoms.

**Intermittent treatment**—one only is adequate—in a patient for duration under 10 days, and is common in treatment and surveillance cases. When the severity of the symptoms allow intravenous injection should be resorted to but where extreme rigidity of column is needed e.g. acute, the intravenous route must be made use of.

**Dose**—of quinine are especially useful in column and cases where oral quinine is not tolerated. Its employment in column is restricted to mild cases and in oral cases used.

We would draw particular attention to the need for adequate courses of treatment in all cases of malaria. Most relapses (as opposed to recurrences) are due to inadequate medication.

As a general rule B.T. and quinine injections need three monthly treatment. For one month 10 gr quinine t.i.d. should be given, during the second month 10 gr b.i.d. and for another month, 10 gr once daily.

In M.T. cases 10 gr should be given twice daily for one month followed by three monthly treatment with 10 gr once daily making four monthly treatment in all.

Adjunct treatment with fumes such as stramonium may be given concurrently.

**Relapses**—There is a danger for growing reliance and looked upon as treatment for malaria. While strongly upholding the need for serum in a case in a disease where delay is so well marked, we do not consider that these drugs mask any specific action on the malarial parasite. A large percentage of cases of malaria give a relapse when treated by the Wassermann reaction in the earlier stages of the disease and it may be that N.A.B. has established itself on these narrow grounds.

We attach no importance to a  $\pm$  Wassermann in most of malaria, beyond having the test repeated. Once given a final  $\pm$  reaction are considered to have cyclized as an intermittent disease and are repeatedly treated as such. In parallel to the  $\pm$  result in malaria we would remark that such positive positive results are obtainable in most of malaria and in women during menstruation.

It is our practice to give one injection (10 gr) of N.A.B. on a home before discharge from hospital and to provide an excess time as an after treatment for the women and delay the malaria problem.

A few notes on general nursing of malaria are appended. We wish to emphasize that both patient and medical officer should treat malaria with great respect and not consider a case cured as matter how slight the attack may have seemed as soon as the patient and visible signs and symptoms have disappeared. It is not good practice to treat a malarial case as not serious—cases should have hospital treatment for at least ten days whenever possible. The mild case may at any time develop complications.

**General Treatment**—the patient must be kept warm and all clothing changed after a sweat. Fluids should be given in plenty and M.T. cases should have sodium bisulphate or orangeade or other fluid in proportion to

light to the foot part. In the early stages cold food should not be given but tea, and increase the appetite of the patient should be the guide to the doctor. Alcohol in moderation is not contraindicated, stout is particularly suitable for convalescence.

A word of warning is needed as the cases of acute fever. Never leave them alone in a room, more they escape of M.T. attacks, but terminated finally through getting out of bed and collapsing, and inside is not unknown.

Saline systems are indicated in all cases, but should not be pushed too far.

Hypertonic salts for rapid response is common in a cold bath when the temperature reaches 100° F. Do not reduce the temperature below 100° F. by cold applications. Antipyretics are useless, signs quiescent.

Localities and convulsive cases besides needing constant observation require should have no cups applied to the head and hot-water bottles to the feet. Local pressure and the withdrawal of 20/60 c.c. of cerebrospinal fluid is useful in cases where a quick response to antipyretics quiescent is not obtained.

In conclusion we should like to draw attention to the fact that in M.T. cases after one year D.T. cases after three years, and in quiescent cases after six years of treatment in a non cultural country the infection seems to remit.

There is importance in medical officers, research that many persons infected with malaria during the war still come up complaining of "ague" in the hope of getting a patent for a supposed war disability. Such applications can now safely be refused.

#### BLACKWATER FEVER

Blackwater fever is a disease which calls for prompt treatment and careful nursing. The mortality rate is high in untreated cases and even in those who come under medical treatment early the prognosis is doubtful for the first day or two.

It is outside the scope of this article to consider the many predisposing factors but we would mention that in our experience cerebral quiescence takes up the most likely persons to suffer from this disease.

When there were in temperate climates when the patients return from the Tropics a history of this is usually obtainable. In women the sudden transition from hot to cold weather will precipitate the disease during the voyage. A previous history of malaria is always given, and even after that and the treatment has been entirely successful.

There is a diversity of opinion as to whether a pre-blackwater state exists or a clinical entity. We consider that such a state is probably recognizable, and it is our mission to keep it apparent in our minds when considering examinations of potential blackwater cases. Apart from the history given by the patient, we consider the following points to be consistent

the following symptoms:— All or some of the following signs and symptoms may be exhibited:—

- (a) Persistent headache
- (b) Dull, full of tongue
- (c) Fever, especially noticeable in the respiratory
- (d) Murmur and vomiting
- (e) Great pain, most marked over the kidneys
- (f) Enlarged tender spleen
- (g) Enlarged tender liver
- (h) The presence of albumen, bile salts and bile, pigments in the urine
- (i) Discharge of sometimes, conjugations

When examination of such cases may show no protein at all, or most often very scanty may occur. We wish to draw particular attention to the fact that protein may not continue in these cases.

The threatened haemolysis may be averted by prompt action on the following lines:—

(a) That the patient be fed, keep him warm, and do not allow him up on any period whatever.

(b) Fluids only should be given, and these should be as plentiful as the patient has it in his power to consume. Fluid administration of the urine must be attended by the exhibition of sodium bicarbonate 1 gr. in the half pint as all fluids are more or less likely to cause an acid urine than an acid urine. The vomiting may be too troublesome to permit continuance by oral dosage, in which case give enemata or if necessary intravenous sodium bicarbonate 1 gr. In practice we find that patients do not retain, and absorb greater amounts than 1 gr. by means at any one time. They should be given half hourly in these amounts to overcome this difficulty. In addition, if possible as well as vomiting, compel one to use the appropriate salts.

(c) Gradual de-acidification of the patient should be attempted by means of phenazone compound in preference to quinine as the latter is less likely to cause haemolysis. It is advisable to give two tablets of phenazone compound daily at first, gradually increasing to four daily as the patient improves. If quinine is given do not give more than 1 gr. as an initial dose and do not increase the dosage rapidly. We suggest 1 gr. the first day, 1 gr. the second day, 1 gr. the third day, and after all immediate danger is past, higher doses may be given.

(d) Conjugations if present should be treated with colloid, given at one or two doses and not by the haphazard method of repeated subcutaneous doses which cause little effect.

Quinine or phenazone compound must be stopped at once on the

control hematuria, and treatment given is directed to the following points:-

- (1) The prevention of anæmia (the pH of the blood is below 7 in these cases)
- (2) To ensure the blood plasma which dilutes haemoglobin urine
- (3) The replacement of lost fluid
- (4) To describe symptoms which may block the kidney tubules

These ends may be attained by the prompt administration of sodium sodium bicarbonate 150 gr. at 1 pint of 1 per cent. strength in glucose.

We are aware that there are biochemical arguments against the administration of sodium bicarbonate by the intravenous route on account of the alleged formation of emboli in the blood stream which can cause "White fluid" which helps the maintenance of this theory we are of the opinion that to produce anæmia a one pint transfusion is too small to cause toxic symptoms—white being ample for our purpose, so that emboli are not formed if toxic quantities are taken in the preparation of the fluid.

We start our glucose solution first and add the 150 gr. of sodium bicarbonate after the solution has started. It seems reasonable to us to assume that sodium bicarbonate supplied by any reputable firm will be sterile and we have noticed no ill effects from using it thus.

Those who have tried the oral and rectal methods of administration of sodium bicarbonate will appreciate the unsatisfactory nature of the latter methods where vomiting and diarrhea are prominent features. Further more when the aim is to alkalise the blood it is a slower method to attain this by first alkalinising the stomach contents then by direct transfusion.

The foot of the bed should be elevated on 12 in. blocks and all pillows removed. It is essential to keep the patient warm, and hot bottles should be applied to the feet and legs inside a blanket. On the other hand one wrap in cool, and an ice cap to the head are comforting and may be given at the same time.

Direct light and any place in the room are most unkind to the patient—no music should be excluded by direct light and artificial light should be applied to the feet and legs inside a blanket. On the other hand one wrap in cool, and an ice cap to the head are comforting and may be given at the same time.

The administration of sodium citrate 12 gr. given three daily as a diuretic, and the application of hot fomentations to the loins, will be found useful in the prevention of suppression of urine if a tendency towards this complication presents.

It is important to keep an accurate chart of the amounts of urine passed and the amounts of fluid taken. A test-tube of each specimen of urine should be set aside in a rack and labelled with the time it was passed and the total amount voided at that moment. Comparison of specimens in a previous test will indicate signs of clearing and agglutination tests will show whether the process has proceeded to methemoglobinuria.

The prognosis is better where the disease has not passed beyond erythremia leucemia.

The treatment outlined above has had good results, not only in relieving the worst symptoms, but in retarding the duration of the leucemia. The haemoglobinuria lasts from thirty to forty-eight hours on an average, in our cases.

**Blood Transfusion.**—The question of giving blood transfusion should be judged entirely on the degree of existing anæmia. We do not favour blood-transfusion during the leucocythæmic period, preferring to employ the usual treatment afterwards whenever possible. In such a case as one which came to our notice recently, where the blood count on admission was under 1,000,000 red blood corpuscles per c. c. mm. one has no choice, but must transfuse at once with whole blood.

The technique of transfusion in our emergency case, but we would emphasize that it is really, of course, a matter to be done on a case. To do so is a confession of failure on the part of the operator. To become accustomed to giving ordinary portions of say 500 c. c. there should be, no difficulty, even in cases where the veins are collapsed. It is hardly a question of "how."

The danger of syncope must constantly be borne in mind and on no account should patient be allowed to sit up before vital fluid is being taken and infused. Any change from fluids in which must be very gradual and carefully graded from gelatin and pepton to powdered fibrin and albumin, and eventually reaching a normal light diet in about ten days or a fortnight according to the gravity of the case.

Cases showing anæmia may be quenched with morphine,  $\frac{1}{2}$  or which should not be repeated more than once daily. Antagonism is, of course, avoided.

Malignant parasites may be found in the patient's blood after the attack of leucæmia is over, whether parasites are found or not a course of salts without treatment should always be given. We administer plasmoquine compound in these cases to bring out and eliminate. The systematic administration of this drug is described in our article on malaria in this journal.

Ascorbic issues and other adaptants to restoration of normal health should be employed as part of the after treatment in these cases.

It is not advisable to send persons who have had an attack of leucocythæmia back to a district where re-infection is possible. We have, however, had one patient who had two attacks in twenty years and recovered to enjoy normal health.

THE FLUORIMETRIC EXAMINATION OF WATER SAMPLES  
 BY THE ST. PAUL NAVAL COLLEGE, BIRMINGHAM  
 A PAPER PRESENTED BY F. F. FIDDIS AND J. H. K. H.

THE Naval Academy examination of water on the *Forer* at Home is conducted at the Midland School R.N. College, Gt. Westons. Two classes of samples are concerned: drinking water and swimming bath water. The investigation may be called for in the case of these establishments whenever a complete analysis of the drinking water is considered necessary [1]. Various reports and certifying stations submit samples periodically, especially when the supply is obtained from private sources independent of municipal control. It is laid down also that medical officers of ships shall take steps to have an analysis made if there is an extraordinary report upon the water to be taken on board [2]. In addition, the Admiralty sometimes requests to have the process carried out for various departments, notably the Navy, to ensure that water is subjected to routine quarterly tests in order to ascertain whether the methods of distribution are efficient. [3]

A full technique has been elaborated for the testing of drinking water and a short modification of the process is employed in connection with bath samples.

In dealing with this subject the point that needs most emphasis is that a proper scientific procedure should be followed when taking, sealing and dispatching samples for examination. Printed instructions accompanying the special bottles which are used for the purpose from this department, but from their contents no reason is so often evident that the method of collecting, packing, etc., has been at fault.

A few essential points being a criterion of purity it is necessarily vital to handle the specimen in any way that might cause a contamination or the addition of impurities or from extraneous contamination. Therefore the gathering of samples calls for certain special precautions, and some less skilled persons should be instructed with the duty. It is essential that the water collected for examination shall be representative of the supply as a whole. Hence the warning that taps should be let run to clear the pipes or that a sample must always be taken from the body of the water of a lake, stream or well. Distance in pipes and taps and minute distance in lakes or at the edge of running water may entangle little masses of bacteria and give the sample an unduly high count. If it is necessary to draw from a depth a weight can be attached to the sample bottle by means of wire, shoulders and lower frame work and stopper well covered the process of lowering and lifting. The bottle is then lifted out rapidly and is stoppedper at once, the closing button cap being carefully replaced and the identifying label attached. Again the water sample has to deal with a number of factors the whole will ensure a low temperature and inhibit growth of organisms during transit. Say a day's journey of London drinking water



common (10 bacteria per liter). If the depth of water temperature is right the count might easily reach 40,000 per c.c. and approximately that is original suspended TSS water. Such a loading might entirely consume the supply. In cases where the content of organic matter is very low the usual population may soon be followed by autolysis and then gasified from want of nourishment. In an air cooled tank, they will be most turned on a scale condenser without multiplying and give a fine count on culture.

In the laboratory the first process is to estimate the number of bacteria of all kinds contained per cubic centimeter of the water—microscopic examination. The number of colonies developing on gelatin plates incubated at 30° C. is generally accepted as a measure of the relatively harmless actively growing saprophytes derived from air, soil and plants—e.g. *Bacillus* and *Staphylococcus*, spores, yeasts, strains, molds and bacteria. Gelatin hydrolysis—e.g. *B. proteus*, *B. sporadicus*, *B. pasteurus*, *B. megaterium*, *B. pasteurii*, *B. subtilis*, etc., are recognized as more objectionable. Some of them arise through exposure of the water to previous organic matter, possibly sewage. A high percentage of this count is therefore considered undesirable. Presence of bacteria associated with pollution is also suggested if the growth on gelatin gives off noticeable odors. On the other hand organisms derived from sewage or human pollution flourish at 40° C. and will develop best on agar plates incubated at 37° C.

Saprophytes are natural in waters from some sources such as rivers and spring waters, particularly after rain following dry weather. Therefore a certain content of these organisms is often allowable. *Agar* growths are more likely to be harmful, and only a small number of this class is permitted for a potable water. A high agar count, however, is present at the same exposure of a water to autolysis as compared to the gelatin count. There is a recognized rough limit for the individual counts and for the relationship gelatin growth and agar growth.

The next step—the most important part of the analysis—is to ascertain whether organisms of fixed type are present. Search for actual pathogenic agents is quite impracticable as a routine but if causal fever, etc.—e.g. *B. coli*, intestinal streptococci or *Shigella* species are found in the sample it follows that these may have been opportunist also for contact with dysentery, cholera, etc. from a typical source. Further it has been shown that *B. coli* and *B. dysenteriae* demands to be treated as along the same rule. Therefore if a water has been so polluted as to show *B. coli* it can be accepted as free also from *B. dysenteriae*. The search for the common fixed organisms as indicators of possible infection concentrates the qualitative examination. Bacteria and phages are used to demonstrate "coliforms group" and streptococci respectively. Aerobic fermenters are then examined further. At this stage they are guided as follows: *B. coli*, *B. proteus*, *B. sporadicus*, *B. pasteurus*

appears brownish black and diffusible (0.001 g. out of each 10). The other colonies grow on bottom of medium (1.000 g.) and will be abundant, except on hanging portions on 15 will have water hanging, either to hinder growth of the aerobic types (7). *Desulfovibrio* vibrios may be observed from 100 to 1000 colonies, about half coming on the periphery of 100 to 1000 B. coli.

*Desulfovibrio* is to be held to be found on the glucose tubes once they appear, because this is done as when the medium turns acid. The anaerobic growth of this type is indicated by the incogitation of the typical paired and unpaired colonies, on hanging-drop or spread plate. Incogitation by paired colonies is without considerable frequency. In fact, neither tests for disphosphates, or also for fixed nitrogen have lately fallen somewhat into disrepute in favour of the more reliable cob test. Disphosphates are of relatively feeble toxicity and would soon disappear from a water supply. If they are found together with B. coli, comparison of recent fixed points is of considerable value.

As a short way, many only make position as a routine of their power of spore forming, they are able to permit for long periods. Therefore they are much less valuable as indices of possible contamination with natural cultures, etc., than the non-spore, tubercular form (6). On the other hand, if they are demonstrated as a sample which is positive, then the B. coli or disphosphate as above report is further justified. A sample so called "disphosphate" but usually sulphate-sulphide fermentation is made. In special cases the "sulphate colonies" are supplied plates on glucose (test agar) (7). Certain colonial features such as B. coli are capable of colouring the sulphate and forming black colonies. B. coli and the other forms associated with vegetable decay do not possess this power.

Microscopic features containing samples are prepared and tested immediately they are received in the laboratory and submitted to test as soon as possible. Should there be any considerable delay, they are placed in the ice chest to avoid contamination.

Residual stocks of the necessary, peptone, pure dried MacConkey, plates and various, tested media are kept ready for use. The latter samples —

Natural agar and gelatin for plating plates.

MacConkey (B) litmus lactose (1 per cent) & bile salt (0.5 per cent).

Peptone (2 per cent) water — single and double strength

Glycerine (2 per cent) cooked red (0.01 per cent) acids — single and double strength

Peptone water. Distilled water of various sugars for carbohydrate of B. coli (1.0)

Glucose sulphate (100 agar) (7) and milk for anaerobic cultures

Key media plates and racks of tubes, appropriately marked, are arranged as convenient on the bench for the distribution of such samples as follows: —

$$\begin{array}{l} 1 \text{ plate} = \frac{1}{100} \text{ g.} \\ 1 \text{ plate} = \frac{1}{100} \text{ g.} \end{array} \quad \begin{array}{l} 0.1 \text{ g. out of 0.1 g. of sample} \\ 0.1 \text{ g. out of 0.1 g. of sample} \end{array}$$

(for enumeration of organisms)



is possible, based on taking the mean of a few representative readings and multiplying by the appropriate factor—perhaps with the aid of a computing table (e.g., Zimmerman & Hochstadt). Unconstrained plate counts give pollution of the culture.

The lactose tubes may show fermentation in 24 h or 100 h and when MacConkey plates are inoculated from the weakest tube that gives a positive result. If this is carried out as soon as gas formation is apparent, it avoids development of excess acid reaction, which might interfere with the color boundary test [9]. If red is strongly suggested at gas forms in 16 per cent of tubes of the inverted plant on the Durham tube after twenty four hours incubation. Absence of gas on completion of forty eight hours constitutes a negative test. [10]

Acid growth in the glucose tubes is examined for fermentation either by tubes stained blue or by a variation of the hanging drop. The latter involves a special method where a number of samples in microemulsification. Parallel lines are marked across a slide with a machine pencil (etched marks on a Pyrex paper), and a long cover slip is applied over all. Drops from the tubes are run into the compartments with the glassware kept, and emulsions in the two ends are easily recognized under the objective by their morphology and consistency. The inverted red dye in the medium across the detection [11].

At this stage also a reading is taken of any tube put up for intestinal reduction, e.g. milk for characteristic string test and indole, where,

colony culture plates for large (5-7 mm) black colonies. Any such colonies growth can be further examined for *B. coli* by subculturing on milk.

If the MacConkey plates show no red colonies—i.e. negative presumptive *B. coli*—the sample may be reported upon forthwith. Members of the coliform group then appear as red (fermenting) colonies and must be examined further—

Let the value of the index =  $R_1$

$R_1 = \frac{\text{total count of the } B. coli}{\text{total count of the } B. coli + \text{total count of the } B. coli}$

$$R_1 = \frac{100}{100 + 100} = \frac{100}{200} = 0.5$$

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Then the index is =

$$\begin{aligned} R_1 &= \frac{100}{100 + 100} \\ &= \frac{100}{200} \\ &= 0.5 \\ &= \frac{100}{100 + 100} \\ &= \frac{100}{200} \\ &= 0.5 \end{aligned}$$

Similarly, the  $B. coli$  index =

$$\begin{aligned} R_2 &= \frac{100}{100 + 100} \\ &= \frac{100}{200} \\ &= 0.5 \end{aligned}$$

(1) *non-fermenting, aerobic, non-sulphur-requiring, anaerobic*.

(2) The *Acetivibrio* group (fermenting) (type 1) (type 2) which does not respond to oxygenation, minimal media and anaerobic tests. Three years ago MacKenzie [3] tabulated 175 possible varieties of this entire group of bacteria fermenters, and has an extensive survey of the material in the subject in books and thesis. A. L. Hollander [12] describes 374 species. These comprise a number of subgroups (described according to their behaviour on various media by the methods of MacKenzie, Hollander and the American authors). In order to give an opinion however as to the probability of a variety of an only necessary, is already the bacterial content in accordance with the accepted tests for essential in agreement essential organisms. Actual experiment with artificial non-fermenting proves that local material in a body of water will add a type of soil from which adheres to *Delphinium* (see of material) (p. 1). In contrast, other forms of *Delphinium*—soil, vegetation, etc.—forms a type group as entirely different response [1]. Some day, the results obtained with some samples of the group from the *Delphinium* pollution.

From this column are made from the MacKenzie plates and a variety for or against local *B. coli* runs upon the following tests:—

A. Morphology. *Strep. de* colonies show negative non-sprouting habitus, generally smooth and about 2-5  $\mu$  up.

B. Fermentation	lactose	1 per cent solution in liquid 100% water; 100% sugar 100% (1 per cent) but 100% per cent
	starch	
	glucose	
	cellulose and lignin	

C. Peptone Media. For rapid production by putrefactive action in the medium.

D. Culture for non-fermentation.

E. *Acetivibrio* (type 1) [13] a clear watery solution of anaerobic cells with various strains in the only source of the carbon necessary for bacterial growth. Several species of *B. coli* are available to culture under a form of carbon and will produce no change in the medium. The *Acetivibrio* group grow in it rapidly and give a marked turbidity.

F. Gas tests	In buffered glucose medium, viz. peptone, glucose and dextrose; hydrogen phosphate as 0.1 per cent in distilled water [10]
G. Hydrogen gas concentration	
H. <i>Voges-Proskauer</i> (phenol) reaction	

These colonies yield more or less gas (hydrogen and  $\text{CO}_2$ ) on fermentation of carbohydrates. The hydrogen is formed in much the same amount by all members of the group, the difference in total gas production being due to variation in the volume of  $\text{CO}_2$ . The ratio between the two gases



Sample	Location	Depth
1	100 yds. S. of bridge	10 ft.
2	100 yds. S. of bridge	20 ft.
3	100 yds. S. of bridge	30 ft.
4	100 yds. S. of bridge	40 ft.
5	100 yds. S. of bridge	50 ft.
6	100 yds. S. of bridge	60 ft.
7	100 yds. S. of bridge	70 ft.
8	100 yds. S. of bridge	80 ft.
9	100 yds. S. of bridge	90 ft.
10	100 yds. S. of bridge	100 ft.

At mid-point in paragraph B, ref. to the water B.T.D. = 1.0 m.l. 11 m.l. of the sample was used, is confined to position on negative F. report B, ref. This corresponds to the smallest concentration of water which has occurred in the test. Further findings are reported as percent on this quantity, above (over the test quantity), down (in, under). The smaller the portion found in section B, ref., the more serious the pollution. It can be expressed quantitatively as the "acid index," i.e. the percentage of the smallest amount of sample from which a positive result, e.g. —

Sample	Location	Depth
100 ft.	100 ft.	100 ft.
100 ft.	100 ft.	100 ft.
100 ft.	100 ft.	100 ft.
100 ft.	100 ft.	100 ft.
100 ft.	100 ft.	100 ft.
100 ft.	100 ft.	100 ft.
100 ft.	100 ft.	100 ft.
100 ft.	100 ft.	100 ft.
100 ft.	100 ft.	100 ft.
100 ft.	100 ft.	100 ft.

#### Significance of Tests and Results (November 19, 1917)

The question is whether the water is fit for drinking. A final opinion is deferred by —

(1) The analytical results from the foregoing tests.

(2) A knowledge of the chemical findings, e.g. nitrates and nitrites (acid pollution); animal organic matter (effluent and domestic animal pollution).

(3) Where available a comparison with tests for previous samples from the same source.

(4) A consideration of the local conditions, meteorological, topographical, etc.

The tests are by no means absolute, but they do give a broad idea of the number and probable source of the bacteria in a sample. If the system uses the water supply of a community, it is safeguarded and the efficiency of filtration or other treatment can be judged.

Wherever data on these bacteriological findings according to these organs but an individual supply should give fairly constant tests on practical examination. Any marked change in bacterial content means serious cause it can be explained, e.g., by weather conditions. If a system is

upper 10% number of eggs should not be an appreciable variation in the different stages. Different test-tubing of the pupae can be suggested.

Condition of the soil has a most important influence. Before a water supply can be applied in a satisfactory manner of the gathering grounds is suitable. The bacteriological examination must be properly interpreted after full information is available as to—

- (a) The origin of the supply, i.e., open lake, spring, surface.
- (b) The geological character of the district, depth, rock, gravel, cemented land.
- (c) Soil, opportunities for contamination by animals, birds, vehicles, sewage.

(d) Prevailing weather, drought, rain, flood, season, temperature.

(e) Methods of purification, storage, storage, chemical substances, reliability of time taken, efficiency, etc.

Findings for water from rivers, brookside and shallow wells are much affected from rainfall. Findings of surface water from the surface furnish an abundant food supply for bacteria so that many more may be found per cubic centimeter in the wet season. The stored water of water more like, and this practice should be recommended and, if properly protected, should give low count. Also the quantities left upon large portions should show freedom from *B. coli*. Springs and deep wells are so placed as produce very pure water by reason of the filtering effect of long percolation. High count is samples from such sources and presence of any, coli aerogenes type or sporting bacteria formers (increasing undesirable surface drainage) would justify an adverse report. Sometimes a reliable supply may be exposed, e.g., on an open reaction of some point on its course. *B. coli* may be present but due to hard life and human contamination, and therefore attended by an outbreak of infection with pathogenic organisms peculiar to man. In such case this stoppage can be and not to be found associated. When, however, sewage treatment is possible, as in a surface well or river water discovery of the colon bacillus may indicate the supply.

Occurrence of a typical coliform of small importance as a rule but it has some significance in the case of river waters. Samples drawn from a stream at points well above township exhibit aerogenic types whereas total *B. coli* percolates as it flows past isolated areas. If the former variety is in evidence it means possible pollution; *B. coli* the coliformity in the running stream [19].

Good chlorinated water may show irregular germs after rain. They should be free from before treatment, of coli aerogenes group. Presence of these would signify that more efficient treatment is needed. Bacteria, comp. however, cover, and yet be no indication of possible danger from microbial pathogens. In their resistant phase they are capable of surviving the standard dosage of chlorine, 1 part in 700,000 [10] [20] whereas



non-supporting, colonisation: typical periphyton (*S. musci*) would, however, be destroyed.

The counts on gelatin columns are —

(1) The proportion of relatively harmless saprophytes

(2) Indirectly, the degree of organic pollution which may be inferred from pollution for other more harmful organisms.

When an estimating total count has been taken of faecal faunas (see p. 10) it is accepted that the sample has been properly selected, pollution is low, etc. Commonly accepted limits for pollution are as set out —

Safe pollution index	Up to 150 per cent
Moderate	150
Severe (not bad)	1000
Bad	Over 1000 (p. 17)

Especially should be observed in very small numbers of faecal faunas in good samples. Higher percentages increase suspicion.

A satisfactory ratio between gelatin counts and total count — about 5% to 7% faecal faunas — e.g. *Chironomidae*—*Collembola* are such an important means but also the ratio, since gelatin grows and otherwise more susceptible to the greenhouse. It has shown also where the prevailing saprophytes grow readily at 17°C. there may be very little difference between the two counts.

### 3.2.2.1

In regard to *B. coli* authorities now set a limit of not more than 1 per 100 c.c. for pure water — i.e. may be positive in 100 c.c. of sample but must be negative in four. Samples from apparently untreated sewage streams and springs, should not contain the organism even in 100 c.c. — *B. coli* in a general rule should be checked as made of essential organisms appear in 10 c.c. or less (10). This can be qualified in certain instances — e.g. where it is known that there are growing streams, especially due to the severity of the catchment areas of a municipal supply but no change of faecal pollution. In this case, though *B. coli* may be positive in 10 c.c. it does not tally with a very likelihood of contamination with refractory organisms and the water may be passed fit for consumption. *Streptococcus faecalis* *B. coli* however, in this context is regarded as serious pollution. *B. coli*, as 1 c.c. is always reason for condemning the water.

The following are useful standards for the general use of samples —

<i>B. coli</i> count from 100 c.c.	Count from 100 c.c.	Count from 100 c.c.
positive in 100 c.c.	count from 100 c.c.	count from 100 c.c.
positive in 100 c.c.	count from 100 c.c.	count from 100 c.c.
positive in 100 c.c.	count from 100 c.c.	count from 100 c.c.

Count from 100 c.c.  
Count from 100 c.c.  
Count from 100 c.c.  
Count from 100 c.c.

(1) only count water should be counted (2) in all cases water should be counted (3)

A recent report from the Liverpool water works as a striking example of the significance of *B. coli* as an index of possible faecal pollution (21). In the first quarter an unusually high content of *B. coli* had been

absent at water temperature shortly before the occurrence of anophthalmia in the district. It is therefore suggested that the outbreak might be water-borne and it is a step forward actually found an epizootic of fish-borne anophthalmia.

#### DISCUSSION

Stephanos generally held the opinion of recent food contamination although it is held that certain shrimps may have a less potent virus. That shrimps caught with  $B = 1$  or 2 are considered less significant, and on this they found their shrimps is not reliable proof of purity [21]. Laboratory shrimps do not necessarily justify an adverse report unless present in fairly large numbers. They should not be detectable even in 100 or portions from deep wells or from springs and it is necessary, to require a finding 'absent in 10 c.c.' in the case of samples from shallow wells, head springs, rivers and upland supplies [22].

#### CHARACTERISTIC LACERATION PATTERNS—BACTERIA, ANOPHTHALMIA

It is this is of little value is no index of danger from pathogenic organisms. A large collection with species may occur through the medium of fish in exposed waters [17] e.g. open reservoir. Anophthalmia may persist in a water long after vegetative forms have yielded to circumstances such as change, oxidation or chlorination. They are more or less ubiquitous according to their medium, but, if present alone, equally no more than remote pollution, which may have occurred weeks or even months before. If however they are discovered in company with 'bacterial indicators'—*B. coli* and *Staphylococcus*—they increase the evidence pointing to contact with contamination material. Evidence of *B. coli* in a normal tributary of lakes and commonly found in manured and sewage treated soils, would again suggest pollution of this nature. The important point is that sewage yields a positive result in 500:1 or, whereas pure water gives a finding 'absent in 10 c.c.' or even more [23].

Where attention is directed specially towards *B. coli* the group, typical findings are [24]—

<i>B. coli</i> organisms—very pure (no bacterial indicators found and this is a trap)	Shrimps from large reservoirs —45 samples—12 $B. coli$ .
<i>B. coli</i> a good positive result (from 5) absent—first head spring river—upland & clean	12 water from rivers

With the 'sulphide release' test using 40 c.c. of sample, the standard of purity is—

Large public water supplies of most possible origin	One third sulphide
Small filtered water	Two parts, clean & sulphide
	Five parts of one indicator (2)

*Sanitary conditions: Water*

The third part of the method of points [1] the water supply is assumed to be constant or approximately of that quantity —

(1) Most water is used on the toilet (e.g. flushing, hand-washing, shaving, bathing, etc. and shower). This involves suspended organic matter and organic matter of the dissolved nature. A roughish estimate the value

(2) Average chlorine by oxidation and consumption the daily balance which makes waste water so unwholesome

(3) Addition of a chemical disinfectant, e.g. chlorine gas or sodium solution chlorine (such as hypochlorite or chlorate of lime which liberate a residue of the available chlorine)

Limitations of the point economy for a system of this kind means somewhat heavy initial outlay. This is so in waste pipes on the one end of a municipal and urban sewer establishment where a substantial charge is made for sewers, and after all the mechanical method is probably the most economical in the long run on account of the saving in water. However, because of restrictions at the outlet may necessitate a less expensive scheme. Probably the next best method is where two kinds of chlorine, one plus frequent emptying and refilling. Most service tanks are adopted for this form of purification. Its real success depends upon how often the water is renewed. Although the bacteriological quality may be secured by adequate chemical treatment the water will become increasingly foul and diseased unless it is replenished at a rate proportional to the number of bathers. The degree of contamination depends upon how many people are using the bath. For purposes of calculation this can be expressed in the

bathing load value — i.e. the rate of the number of bathers in the capacity of the bath in thousands of gallons. If therefore a total of 1,000 persons use the bath during the period of one week and the capacity is 10,000 gallons, the weekly bathing load is represented by the figure 10 [16] [20]. Pollution index is a variety of name —

(1) From the human body — excretion, excretion, epithelial debris and grease from the skin and hair

(2) From the contents — food, soap, excretion, from bed linen, etc.

(3) From dust blown in and carried dust transfer into the bathing soiled the feet, etc. and wash into the bath. Factors always accompanying the waste dirt and evidence contributed to show that bath water may sometimes act as a vehicle for the spread of pathogenic germs [21] [17] [22] [23]. When charged with organic matter it becomes a fermentable culture medium especially where without heating is employed. Hence the necessity for treatment with an efficient germicide. Effluents themselves suspended organic matter which otherwise would denote a certain amount of the chemical by absorption. There should be a close adjustment also between the design and the bathing load. Water disinfectant is required when the attendance is low as there will be less circulation. Most authorities agree that the water should be so treated that an excess of available

As much as 1 lb. (453.6 g.) of chlorine is added to 10 parts per million (p.p.m.) of it, this should be washed by means of an underdraining, the water taken over the sludge and solids test. Beyond these steps the odor of the chemical becomes objectionable and irritating effects—swelling of the eyes and mucous membranes—are experienced. This standard applies where continuous filtration and chlorination are carried out. However, change is necessary in the choice of a source of the dose. The Service method (30) consists in frequent control of the water—mainly, when the chlorinate total 200 p.p.m. dry, and treatment at different intervals is daily after the bath has been washed. "balanced chloride of lime" is added in quantity calculated upon the capacity of the bath, sufficient to give available chlorine 2 parts per million. A percentage is expended through absorption before the disinfectant action on bacteria can be made plain. The content of quaternary ensures a suitable degree of alkalinity. The method produces results conforming to drinking water standards of purity. A trace of color may be noticed, but no complaints have been made of sensitive people from excess chlorine. Most of the baths have a capacity of 10,000 gallons, therefore 7.50 is the figure for the weekly bathing load.

In a properly conducted modern bathing establishment steps are taken also to minimize the opportunities for pollution and infection and add to the comfort of the bathers by—

(1) The construction and equipment of the building as approved here, efficient ventilation, suitable temperature, adequate sanitary accommodation, provision of steam heaters hot into the sides of the bath. As

(2) Incessant open thorough washing and scrubbing of containers and towels.

(3) Use of showers and lockers before entering the pool.

(4) Warnings against promiscuous spitting and other forms of pollution.

(5) Prohibition of persons suffering from medical discharges, skin diseases, venereal complaints.

(6) Control of bathers, prevention of overcrowding, and where necessary forbidding any too prolonged stay in the water.

The American Public Health Association has promulgated some very interesting and useful recommendations for the management of swimming baths (26)—e.g., (1) the number allowed to bathe during any period should not exceed 10 persons per 1,000 gallons of clean water added during that period. (2) the number should not exceed 7 persons per 1,000 gallons of water in the pool during any disinfection interval (i.e., the period between two consecutive chlorinations). Then an alternate chlorinated bath of 100,000 gallons capacity should be treated to 500 milligrams per litre the next complete disinfection. (3) for comfort and safety the number admitted should be regulated by the space requirement of 25 sq. ft. per man. The average man occupies 70 sq. ft. whilst swimming—i.e., 1/3 of the space of his height, and it can be anticipated that only 1/2 of the total bath capacity will be actually in the water at a time in season.

A standard of purity is to be attained, a standard sample is to be made, 1000 samples (100) that are perfectly like the milk in the month or two, apparently being very different in the milk up to an inch swimming, and it is necessary to get a standard, also, because in the milk in the water, or playing pole. In the fact may then be revealed of the demand that it should be entirely uniform in quality. The child's eating process adapted to the Service is capable of producing complete standardization. These samples are always submitted for test (1) (2) from the child's milk in a control (3) from the milk before use in emptying the, two hours after chlorination (4) at various points—i.e., after 4 or 6 or 8 emptying days. When the routine treatment has been successfully carried out it is frequently found that specimen No. 2 and sometimes even No. 1 yield better results than the original No. 1, though this may be due to the drinking water supply. The requirements are that specimen No. 1 shall exhibit a degree of purity at least as satisfactory as No. 1, and that chlorination shall reduce the maximum bacterial pollution to harmless proportions.

The technique in Standard Milk samples then has been devised for drinking water samples. Former manipulations are needed and the findings can be made that the first forty-eight hours. The test is limited to the plates and agar count and the examination for protozoa, B. coli and streptococci. It is held (21) (22) (23) that the latter means the more reliable index of the amount of bacterial contamination. In an imperfectly chlorinated water, streptococci persist but will not multiply, whereas the more vigorous B. coli will go on increasing and give an undue high count. Samples from the month and first must also be destroyed.

Special tests for selected samples may even be necessary here. Tests in the case of drinking water samples.

The last specimen, No. 4 (water after chlorination) should be practically sterile. The action of the germicide should have so penetrated throughout the distribution system of that specimen No. 3 (at maximum pollution) will give bacteriological findings comparable with a water that is fit for drinking. The requirements will not prevent beyond comparison of the preliminary lactose and glucose tests, upon any fermentation in the day, water is fresh, upon basis of maximum chlorination.

When methods of continuous filtration and disinfection are in operation and water of samples are collected while the milk is actually being, the following standards can be adopted (24) (25):

Total count (growth on agar) twenty four hours at 21°C) —

Not more than 20 per cent. of samples shall contain over 1,000 bacteria per cubic centimeter.

No single sample shall contain over 1,000 per cubic centimeter.

Protozoa: B. coli —

Not more than five out of five samples of 10 c.c. each collected on the same day.

Various parts have shown various gross deformities and being stained by blood vessels. (Small dark patches, peritrophic lines.)

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#### NOTES ON THE USE OF SYNCHRONIK IN SOUL SKIN CONDUCTIONS

BY J. A. G. REHN, 1959, p. 10.

Synchroton, as prepared under the supervision of Professor H. H. Rehn, Copenhagen, Denmark, is an isopropyl compound of the chemical composition  $(CH_3)_2CHCOOCH_3$ . It contains the negative charged ion  $CH_3COO^-$ , which is the active part, active in the

use. First administration is intravenously as a 1 per cent solution (suspension with 1% fresh freshly distilled water). It may be administered intravenously daily as a 1 per cent solution. Subsequently it produces severe reactions and may produce necrosis.

Dosage Employed—Starting with an initial dose of 1.1 gms, the dose was gradually increased. The largest dose given was 1.8 gms. The interval

between the small doses was less than two days. Intense post-operative convulsions in two days between the large doses and a further dose. The operation was not repeated until all reaction from the previous episode had subsided.

Each patient was examined to establish a normal temperature. Two patients were examined before and after each dose. The temperature did not exceed the normal. A weekly record of the body weight and degree of emaciation of these was given throughout each day, but these data were not complete; this is stated to prevent false statistics (H. A. Miles, *Transactions of the Royal Society of Medicine*, December 1934).

The drug was tried on three cases of *Lepus erythrorhineus*—in an case of severe bulimic phases and in one case of hyper-volubility of the trunk. Particulars of the individual cases are given below.

Case 1—A. B. aged 15. *Lepus erythrorhineus*. Five doses started on a small spot on the left cheek seven months previously. It had been treated with various applications but had not responded to special. The bridge of the nose both cheeks, both ears and both prefrontal foramina were involved. The cat gave 1.5 gm of anaproxan in 15 minutes over a period of three days. In addition the individual lesions were painted with pure carbolic acid. After the first injection (5.1 gm) there was no reaction. After the second injection (9.25 gm) temperature rose to 100° F. lesions became more inflamed, several large lesions enlarged and tender. After the third injection (13.5 gm) temperature rose to 105° F. and continued above normal for forty-eight hours. Several glands again became enlarged and tender. Five days followed by a slight and transient followed rash on the hands, arms and chest. After the fourth injection (17.5 gm) the temperature rose to 102° F. several glands became slightly enlarged and the tubercled eruption again appeared.

The response to treatment was immediate and progressive. He was discharged after fifty-five days treatment in hospital. All lesions were healed and beyond a very faint pigmentation there was no mark. The swelling of the cervical glands had disappeared. He had gained weight, a slight leucoderma at spot still remained at the head of the effluvia and on the chest. He was seen five months after his discharge from hospital, there was no recurrence, and the skin appeared quite healthy.

Case 2—L. B. aged 42. *Lepus erythrorhineus*. The disease affected the scalp, the paranasolar and post nasolar regions on both sides, both ears and a few isolated patches on both cheeks. The lesions on the scalp had been present for eight years and were bald and covered with scaly atrophic skin. The hair lesions were of less than a year's standing. He was given 5.5 gm of anaproxan in seven injections over a period of two months. In addition the individual lesions were treated with pure carbolic acid.

The response to treatment was progressive, though it was less dramatic than in the previous case. On discharge after fifty-five days' treatment (5

hospital the two lesions were healed and, leaving a very slight pitting, the skin on the affected areas showed no mark. The lesions on the wings, having already undergone spontaneous cure, showed no change. The cure was seen seven months after his discharge from hospital and there was no recurrence of the disease.

Case 3—A. M. J., aged 39. Lepus erythematosa, but years ago usually the disease started on the left cheek and was treated with  $\text{Hg}$ , some years ago. Later he had a recurrence on the nose and was treated by  $\text{Hg}$ . Three months ago the center of the nose became red and sore. When mercuric treatment was commenced there was a superficial white crust about the size of a penny, over the left nasal region, the center of the nose was slightly raised and red and sore; in addition, there were some small isolated spots on the left cheek and one spot on the left upper lip, the lips, especially the lower lip, were thickened, fissured and covered with wheals and scales and they had been so the continuous for some years. He was given 0.01 gram of salicylic acid in three capsules over a period of sixteen days. No local treatment was employed.

Following the first injection (0.1 gram) there was no reaction. The second injection (0.25 gram) was followed by headache and slight pyrexia which lasted for four days. On the third day following the injection he developed a transient maculiform rash on neck and hands. The third injection (0.5 gram) was followed by an irregular pyrexia which lasted for eight days, also by a swelling of the axillary lymph glands which subsided quickly. On the twelfth day after the injection he developed a papulo-erythematous maculiform rash over face, trunk and hands. This eruption was extremely variable. The hands and feet showed diffuse erythema and marked swelling and were extremely tender. The rash subsided gradually with profuse superficial desquamation.

The response to treatment was satisfactory and progressive. The patient was discharged in duty after fifty nine days at hospital. The spots on the face had disappeared leaving no mark. The red area on the corner of the ear had gone and the lips were normal in appearance. There was still slight desquamation of the hands and feet.

The cure was not seen after his discharge from the hospital.

Case 4—W. B., aged 22. Lepus vulgaris. There were four large patches of the disease on the back one patch on the left deltoid region, and one patch on the chest. Disease was first noticed three months previously when he was undergoing sulphurous treatment for syphilis. The disease was spreading rapidly though it had shown a transient improvement with other mild light treatment.

He was given 0.017 gram of salicylic acid in three capsules over a period of two months. Subjective symptoms were mild and local.

Three days after the second injection (0.05 gram), he developed nasal catarrh and keratitis. These symptoms were accompanied by a moderate degree of pyrexia and were followed in three days by a profuse outbreak



patient's psychological response, involving any loss, shock, and grief. The whole condition is considered as a crisis that is not normal order to enable the patient for a few days. The treatment consists, leaving the sleep with a benzoin preparation, hypnosis, if the work at sleep. Further treatment of subsequent emotional shock is not routine.

The initial stress was followed by a 2-minute exposure to the images. They learned that they had finished the first step. The experiment was such that it was not one of the 100 trials, but a 1-minute test.



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which are not the case. (2) I have no doubt what is at issue, and the question is not, as you suggest, "What is the question?"

[illegible]

He was given 100 grains of potassium iodide in capsules over a period of six weeks.

There was no change in height, a very slight increase, nor was there any swelling of the face or of the limbs. But there was an increase and increase in pulse-rate. Diarrhoea rapidly diminished and disappeared entirely, because less marked and gradually faded. He was discharged on the fifty-sixth day after the commencement of the potassium iodide. There was still some puffiness and distension of the skin to those areas where the secondary derangements had been in or noticed but the typical 100 mm. appearance had gone.

The case was not seen again after his discharge from hospital.

*Effect of Treatment*.—All three cases of lupus erythematosus were apparently cured and the drug appeared to exert a specific effect on the lesions. In two of the cases the results were dramatic.

In the case of lupus vulgaris the drug appeared to exert a temporary beneficial effect but this effect was not sustained and the disease continued to advance. The patient was of poor physique and had twice been treated with x-rays in the previous twelve months. His Wassermann reaction was negative. In view of his marked reaction to x-rays it is of interest to note that he developed psoriasis after his 4th exposure. It might be thought that the drug might have been more effective in a more suitable subject but a temporary improvement of lupus vulgaris followed by renewed exacerbation has been noted (The Gold Treatment of Syphilis, second Report of the Medical Research Council, Lancet July 24, 1926).

In the case of lupus planus the result was encouraging. The disease showed no tendency and progressive exacerbations. It cannot however be firmly stated that the disease was cured, nor that the improvement was the direct result of the treatment.

Though large doses (2.5 gram to 10 gram) are well tolerated when the bowels are gradually increased at suitable intervals I am not convinced that any perceptible benefit is reaped.

*Complications*.—None. One case (No. 4) showed no fever. The thermometer showed a rise of temperature at some point of the treatment. The patient tried to cough after the medium dose (2.5 gram) and 5.5 gram (and was less marked after the larger dose). The highest temperature recorded was 100° F. The temperature generally rose three to four days but in one case (No. 2) an irregular temperature persisted for eight days.

*Adverse*.—Two of the cases of lupus erythematosus (Nos. 1 and 3) showed a transient swelling of the cervical lymph glands after ingestion of 2.5 gram and 5.5 gram.

*Remarks*.—In two of the cases there was no satisfactory result. One patient (No. 4) developed a transient bilateral myopia at high dosage. In the two remaining cases (Nos. 3 and 4) the rash was profuse extensive

and vent tegulae cyathiform, in shape. These ~~small~~ scales embedded deeply with superficial desquamation, leaving the skin marked with a brownish pigmentation. In Case 1 the pigmentation washed washed the month after the rash had subsided. The transient edema appeared within a few days of the eruption, kept the ankles swollen, appeared at a later date in one case twelve days after the last eruption.

*Abnormalities*.—Only two of the cases showed a very faint trace of albumin and then only on a single occasion.

*Stomatitis*.—No case developed stomatitis and none complained of any metallic taste in the mouth.

*Gastro-intestinal Symptoms*.—No case developed any gastro-intestinal symptoms.

*Constitutional Symptoms*.—Even in the cases that developed intense eruptions the constitutional disturbance was slight. There was a slight tendency to a temporary loss of weight with the larger doses.

#### A VISIT TO A SNAKE FARM: THE COLLECTION OF SNAKE VENOM.

DR. SEYMOUR L. KATZMAN, J. B. FREEMAN, M.D.

1938

VENOMOUS TROPICAL CROCODILES, J. B. FREEMAN, D.D.S., M.D.

Many people know that in all times and in all nations kinds of snake bite can be obtained in the form of medicinal serum, but the exact method employed to collect the venoms of poisonous snakes prior to the production of the serum are probably not widely known. The following description of a visit to the small snake farm at the Hoffman Institute, London, may be of interest.

In November 1937 we obtained permission to visit the farm by the kindness of Dr. Walker, one of the senior lecturers attached to the Institute. He himself conducted us and we saw in detail the methods by which the dangerous snakes of India are persuaded to yield their venoms. Only collection of the venoms is done at the Hoffman Institute. The further stages in the manufacture of the venoms serum—namely, raising of the horses and standardization—are carried out at the Central Research Institute, Kasauli (near Nainital). After collection the venoms are sent there in the dried form.

The laboratory where the snakes are kept is large with excellent lighting and ventilation. Twenty-five poisonous snakes are kept there of which thirteen are cobras and twelve Russell's vipers. Each snake is housed in a glass case about the size of a small travelling trunk. Access to the reptile for purposes of feeding and handling is by a hinged lid. The narrow entrance where duty it is to handle the snakes is a circle

man, who apparently regards the danger of the serpent's sting as part of the day's work. He in no respect is alarmed that risk is reduced to a minimum. Dr. Holley told us that the snake and later later four times, each time by a cobra, but having received no night experience of antivenom had experienced nothing more than a little local discomfort (except on one occasion when the bite was at the base of the left thumb and caused some sloughing of the tissue and resulting deformity).

The extraction of the venom was demonstrated on a snake, but the



Snake. It is using its mouth for the extraction of venom.

same method is used on the human subject. The snake, previously anaesthetized, was opened the head of a cobra once and with a deft movement seized the snake by the tail and thrust it in to discharging flow of the laboratory where it breathed and pulled its head in, allowing displacement. He then took a long stick and quickly stirring, one and across the reptile's head he pressed the head to the floor, temporarily passing it there. Then he thrust down and grasped the snake just below the head. Apparently, after suffering with reluctance the cobra was prepared to bite anything or anybody. The reason for the reason was then produced. It was a small glass bowl filled with a tough rubber





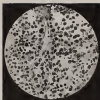


Fig. 1. Micrograph of the surface of the material.

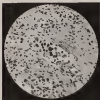


Fig. 2. Micrograph of the surface of the material.





disproportionately small (about 1.5) pulse strong, regular (60 per minute). Temperature normal (98° F.). Pupils equal, but pupillary reflexes not active (no reaction to light). Vision and hearing are then made up normal.

No reflexes noted. No reflex responses except any where.

From time I have noted that he would make propulsive motions, etc. of his hands, feet, etc. etc. etc. his responses equal for the time. In addition when I asked him to do a voluntary muscular action. He being allowed to collapse, sometimes his responses returned to the previous state of inertia and did not react to the stimulus.

In view of this condition I repeat after a variation of his patient and of the fact that he had been unconscious, his own eyes, hands, etc. were somewhat noticeable in their lack of reaction.

A history of the patient during taken more previous medicine, was obtained but the nature of the patient was unknown.

Physical examination, none taken as abnormality.

Progress.—Further reports showed that the patient had taken an amount of food by his hand and had taken to go to the door. On Friday, the patient was unconscious throughout the day. His reflexes improved, especially the finger pressure. Responses showed weakness and rate was increased. Pulse unchanged, no reflexes obtained, responses of other general.

History of the patient showed in the state of muscular system with motion of responses and of it.

On Saturday he was partially conscious, his very short periods and when asked by stimulus, would about the same, equal to that which caused him and would continue to show this until he again collapsed into a state of unconsciousness.

He continued to be weak, but no other reflexes were obtained.

He still had still propulsive movements of the limbs, etc. etc. etc. but responses were not yet affected by causing him.

He was, however, now, and of some to walk.

Physical exam and lower limbs steady, during the day.

At 11 p.m. he seemed probably for nearly an hour, all his limbs being no longer.

On Sunday he was conscious and rational, but very drowsy, and his propulsive phase and weakness of him he had taken his food, but had great difficulty in keeping awake while being questioned.

Pupils were dilated but still small. Both showed reaction to light and sound motions. General reflex present.

On Monday morning appeared to be better, as all dysphagia and showed this unpleasant movements. The motor movements were then being studied by the patient's ability to react to stimulus.

Upper limb reflexes and abdominal reflexes absent.

Lower limb reflexes present in both legs, but reactions very sluggish. Patient responds better to both sides.

Speech was abnormal as patient had no touch in his upper jaw. His milk was noticed that his speech was so much that as a result of having his speech at a later stage, I believe that some dysphagia, resulting in slurring of speech, was present.

On Monday the condition showed no change except that drowsiness was less marked.

On Tuesday some dysphagia still present, marked Rombergism and ataxia, etc., resulting in falling backwards, angles movements noted that pupils still somewhat contracted.

Patient complained of a "burning" in the hand.

On Thursday the upper limb reflexes were going out with difficulty. Rombergism and ataxia of gait still present, but much less marked.

On Friday, 11 September 1940, the patient was brought to the hospital for a second time.

There was no return of hyperextension of the neck and no return of any signs or symptoms of a spinal cord lesion. A further examination was negative. The patient was discharged.

#### REPORTED DISSECTION OF ANULUS FIBROSUS

THE PATIENT, 45 years old, is a female.

She is a native of the United States.

The patient was admitted to the hospital on 11 September 1940, with a history of a fall from a ladder on 10 September 1940, at which time she sustained a fracture of the neck of the femur.

On 11 September 1940, the patient was admitted to the hospital at 10:00 a.m. She was a native of the United States, 45 years old, and was a housewife. She had, however, been in the hospital for a number of days on the previous day. She was in the hospital for a number of days on the previous day. She was in the hospital for a number of days on the previous day. She was in the hospital for a number of days on the previous day.

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respectively. The first group, working in the house at Bunting, is now the only house in the village of Bunting. The second group, working in the house at Bunting, is now the only house in the village of Bunting.

In 1900, the first group, working in the house at Bunting, is now the only house in the village of Bunting. The second group, working in the house at Bunting, is now the only house in the village of Bunting.

The first group, working in the house at Bunting, is now the only house in the village of Bunting. The second group, working in the house at Bunting, is now the only house in the village of Bunting.

### Methods and Translations.

THE FIRST GROUP WORKING IN THE HOUSE AT BUNTING IN 1900 TO 1901

The first group, working in the house at Bunting, is now the only house in the village of Bunting. The second group, working in the house at Bunting, is now the only house in the village of Bunting.

14th March 1900

The first group, working in the house at Bunting, is now the only house in the village of Bunting. The second group, working in the house at Bunting, is now the only house in the village of Bunting.

The first group, working in the house at Bunting, is now the only house in the village of Bunting. The second group, working in the house at Bunting, is now the only house in the village of Bunting.

12. The first step in the process of the formation of the United States was the signing of the Declaration of Independence in 1776.

The second step was the signing of the Constitution in 1787. This document established the framework for the federal government and the relationship between the states and the federal government. The third step was the signing of the Bill of Rights in 1791. This document guaranteed the basic rights of the citizens of the United States. The fourth step was the signing of the Louisiana Purchase in 1803. This purchase doubled the size of the United States and opened up new lands for settlement. The fifth step was the signing of the Missouri Compromise in 1820. This compromise established the balance of power between free and slave states. The sixth step was the signing of the Compromise of 1850. This compromise addressed the issue of slavery in the newly acquired territories. The seventh step was the signing of the Kansas-Nebraska Act in 1854. This act allowed the people of the territories to decide for themselves whether they would be free or slave states. The eighth step was the signing of the Lincoln-Douglas Debates in 1858. These debates focused on the issue of slavery and helped to shape public opinion. The ninth step was the signing of the Emancipation Proclamation in 1863. This proclamation declared that all slaves in the Confederate States were free. The tenth step was the signing of the Reconstruction Acts in 1867. These acts established the process for the Reconstruction of the Southern States.

The eleventh step was the signing of the Reconstruction Amendments in 1868 and 1870. These amendments guaranteed the rights of the newly freed slaves. The twelfth step was the signing of the Sherman Antitrust Act in 1890. This act was the first federal law to prohibit monopolies. The thirteenth step was the signing of the Pure Food and Drug Act in 1906. This act established the Food and Drug Administration. The fourteenth step was the signing of the National Labor Relations Act in 1935. This act established the National Labor Relations Board. The fifteenth step was the signing of the Civil Rights Act of 1964. This act prohibited discrimination on the basis of race, color, religion, sex, or national origin. The sixteenth step was the signing of the Voting Rights Act of 1965. This act prohibited the denial of the right to vote on the basis of race or color. The seventeenth step was the signing of the Environmental Protection Act in 1970. This act established the Environmental Protection Agency. The eighteenth step was the signing of the Americans with Disabilities Act in 1990. This act prohibited discrimination against people with disabilities. The nineteenth step was the signing of the Affordable Care Act in 2010. This act established the Patient Protection and Affordable Care Act. The twentieth step was the signing of the ObamaCare Act in 2010. This act established the Patient Protection and Affordable Care Act.

The twenty-first step was the signing of the Dodd-Frank Wall Street Reform and Consumer Protection Act in 2010. This act established the Consumer Financial Protection Bureau. The twenty-second step was the signing of the Patient Protection and Affordable Care Act in 2010. This act established the Patient Protection and Affordable Care Act. The twenty-third step was the signing of the Dodd-Frank Wall Street Reform and Consumer Protection Act in 2010. This act established the Consumer Financial Protection Bureau. The twenty-fourth step was the signing of the Patient Protection and Affordable Care Act in 2010. This act established the Patient Protection and Affordable Care Act. The twenty-fifth step was the signing of the Dodd-Frank Wall Street Reform and Consumer Protection Act in 2010. This act established the Consumer Financial Protection Bureau. The twenty-sixth step was the signing of the Patient Protection and Affordable Care Act in 2010. This act established the Patient Protection and Affordable Care Act. The twenty-seventh step was the signing of the Dodd-Frank Wall Street Reform and Consumer Protection Act in 2010. This act established the Consumer Financial Protection Bureau. The twenty-eighth step was the signing of the Patient Protection and Affordable Care Act in 2010. This act established the Patient Protection and Affordable Care Act. The twenty-ninth step was the signing of the Dodd-Frank Wall Street Reform and Consumer Protection Act in 2010. This act established the Consumer Financial Protection Bureau. The thirtieth step was the signing of the Patient Protection and Affordable Care Act in 2010. This act established the Patient Protection and Affordable Care Act.

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commenced many years of correspondence, and the result is a splendid work. The history of both France and Great Britain presents itself in almost complete contrast to the usual historical view, and the reader is enabled to study the events of centuries in relation to the present. The work is really a study in history, and is a work of the highest quality. It is a work of the highest quality, and is a work of the highest quality. The work is really a study in history, and is a work of the highest quality. It is a work of the highest quality, and is a work of the highest quality.

## REVIEWS

**FRANCIS FRANKLIN AND THE BURNING OF ROBERTS' LITERATURE.** By LOUIS H. FRANKLIN. Lieutenant, Commander, Medical Corps, United States Army. Reprinted from *The Medical Surgeon*, Vol. 1, No. 1, 1891, and Vol. 1, No. 2, 1892. Reprints, 1891, 1892. 100 pp. 10 illustrations. Price 25 cents.

The value of this work has gone up as it has become an interesting historical picture of the life of a great Englishman who worked for the world's good at the greatest sacrifice of all time and whose devotion to the principles of humanity were the best stepping-stone to work of the greatest work that mankind has ever done in the present time and will lead to better civilization in the future.

These pages have been taken in order, the letters and evidence which tell of Edward Franklin's early life at Berkeley, in Gloucestershire, where he was born in 1774, of his medical education, and the influence of John Hunter on his life. From 1790, of his return to practice at Berkeley, where he became convinced that the remedy for medical study was an approach to the mathematics of Gloucestershire was due to his selection with Hunter, 1800, to show to have been a true character of virtue in addition to his love for science and poetry. His letters, we find all human and was the letters of an admirable physician and a true character of virtue in addition to his love for science and poetry. His letters, we find all human and was the letters of an admirable physician and a true character of virtue in addition to his love for science and poetry. His letters, we find all human and was the letters of an admirable physician and a true character of virtue in addition to his love for science and poetry.

—H. W. Ship, Chesham

—Glasgow, Aug. 10, 1891

General Westcott

"Any soldier, sailor or mariner in the Fleet who may not have had much, and who is not a true character of virtue in addition to his love for science and poetry. His letters, we find all human and was the letters of an admirable physician and a true character of virtue in addition to his love for science and poetry. His letters, we find all human and was the letters of an admirable physician and a true character of virtue in addition to his love for science and poetry. His letters, we find all human and was the letters of an admirable physician and a true character of virtue in addition to his love for science and poetry."

By command of the Lord Admiral

(Signed)

Philip James

The Officer of the Fleet who is not a true character of virtue in addition to his love for science and poetry. His letters, we find all human and was the letters of an admirable physician and a true character of virtue in addition to his love for science and poetry. His letters, we find all human and was the letters of an admirable physician and a true character of virtue in addition to his love for science and poetry. His letters, we find all human and was the letters of an admirable physician and a true character of virtue in addition to his love for science and poetry."





1. *Staphylococcus aureus* (Staph aureus) is a common cause of skin infections, such as boils and abscesses. It is often found on the skin and in the nose.

[illegible][illegible]

It is important to note that the results of the present study are based on a single cross-sectional survey. The results may be different if the study were repeated at a later date. The results may also be different if the study were repeated in a different country. The results may also be different if the study were repeated with a different sample of students. The results may also be different if the study were repeated with a different set of questions. The results may also be different if the study were repeated with a different set of data. The results may also be different if the study were repeated with a different set of methods. The results may also be different if the study were repeated with a different set of conclusions. The results may also be different if the study were repeated with a different set of implications. The results may also be different if the study were repeated with a different set of recommendations. The results may also be different if the study were repeated with a different set of suggestions. The results may also be different if the study were repeated with a different set of conclusions. The results may also be different if the study were repeated with a different set of implications. The results may also be different if the study were repeated with a different set of recommendations. The results may also be different if the study were repeated with a different set of suggestions.

[illegible][illegible][illegible]





Impressions, Impressions, Impressions and Dance, of each design is 1000.

Thus, the all preparations of the French Pharmacopoeia are carefully examined and, if necessary, the results concerning the drugs being, coarse and as well as the quality, controlled by the market.

The present study of plant water transport systems involves analysis of the following all related aspects: (1) an understanding of the transport system as a biological system; (2) the physical, chemical, and mechanical control mechanisms and their interrelationships; (3) the role of plant hormones and growth substances; (4) the ecological and agronomic potentialities of the system; and (5) the measurement of the system.

[illegible]

The book is printed on separate staff paper with lines on which the student may write answers and is bound in the back of the notebook.

For further information, kindly consult the following: Late 19th-century England  
 (with) Margaret D. Cunningham, American, "Surgery, Late 19th-century, Royal Infirmary,  
 and General Dispensary, Adelaide Hospital," Vol. 1, Melbourne and Victoria  
 National Index Works and Press Ltd, London, "Surgery, General and Ltd  
 1880," pp. 100 + 200. With 124 illustrations, a number of which are in colour.  
 Price 10s. 6d.

The first level subjects of emergency surgery deals with the abdomen and pelvis and also did not do abdominal surgery in their 31st hour of their 31st week. The second level subjects of emergency surgery is called as to perform a major operations in some field.

General principles are built into the test length  $\sim 10$  minutes but spaces and multiple choice questions are provided and marks added incrementally and where  $\sim 1$  gram is or when test time is less the potential score.

[illegible]

1. The first concern is the fact that a large number of "homemade" or "unauthorized" or "unregulated" products are being sold in the market. These products are often of poor quality and may be harmful to the health of the consumer. The second concern is the fact that the market is often flooded with products that are not labeled as such. This can lead to confusion and may result in the consumer purchasing a product that is not what they need. The third concern is the fact that the market is often flooded with products that are not labeled as such. This can lead to confusion and may result in the consumer purchasing a product that is not what they need. The fourth concern is the fact that the market is often flooded with products that are not labeled as such. This can lead to confusion and may result in the consumer purchasing a product that is not what they need. The fifth concern is the fact that the market is often flooded with products that are not labeled as such. This can lead to confusion and may result in the consumer purchasing a product that is not what they need. The sixth concern is the fact that the market is often flooded with products that are not labeled as such. This can lead to confusion and may result in the consumer purchasing a product that is not what they need. The seventh concern is the fact that the market is often flooded with products that are not labeled as such. This can lead to confusion and may result in the consumer purchasing a product that is not what they need. The eighth concern is the fact that the market is often flooded with products that are not labeled as such. This can lead to confusion and may result in the consumer purchasing a product that is not what they need. The ninth concern is the fact that the market is often flooded with products that are not labeled as such. This can lead to confusion and may result in the consumer purchasing a product that is not what they need. The tenth concern is the fact that the market is often flooded with products that are not labeled as such. This can lead to confusion and may result in the consumer purchasing a product that is not what they need.

Stages of ascending the, or return to, a level of health in the upper part of the small intestine. The 4 stages are: (a) the patient is in a state of shock, (b) the patient is in a state of shock, (c) the patient is in a state of shock, (d) the patient is in a state of shock.

[illegible]

The book is a plain physical psychology prelude to the more complex behaviourism, which already includes what is intended. The book states the description, which though it is more precise, may well be considered a help to the young man. The book is worthy of recognition and should fulfil the hope of the author.

Wentworth, Toronto, in December, 1937 (any English or French). Dr. F. Davis (London, U.K., 1938 Canada, U.S.A.). Volumes 1-4, 1938; 5-6, 1939; 7-8, 1940. (Hager's First Edition, London, U.K., 1940 and 41, Ltd. 1940). It is a good deal with illustrations and drawings. It is a bit out.

The subject matter is practical, but the book is written in a style which is not very satisfactory. It is a bit out of the way, and the book is not very good. It is a bit out of the way, and the book is not very good. It is a bit out of the way, and the book is not very good.

Each chapter is a study of a subject, and the book is written in a style which is not very satisfactory. It is a bit out of the way, and the book is not very good. It is a bit out of the way, and the book is not very good.

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Each the original authors of this book have tried to do it. Mr. Davis (London, U.K., 1938 Canada, U.S.A.).

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1. *Journal of the American Medical Association*, 1977; 237: 1183-1184.  
2. *First Steps in Learning*, Department of the Royal Commission on the Health of the Welsh People, 1976. (The Royal Commission on the Health of the Welsh People, 1976.)  
3. *Journal of the American Medical Association*, 1977; 237: 1183-1184.  
4. *Journal of the American Medical Association*, 1977; 237: 1183-1184.

Therefore, the results of the present investigation suggest that, when the stimulus is a word, the effect of the change of length on the initial silent period depends on the nature of the word and on the length of the word.

Although the French continue to pour money into the economy, the country is still particularly dependent on foreign aid. The government is also struggling to pay its debts.

The first part of the appendix will be the working and field laboratory data, the latter being very often omitted. The tables are 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 83

4. *unsubstituted benzene*, a strong non-reducing agent, does not react with  $\text{H}_2$  or  $\text{O}_2$  at room temperature.

Washington and New York, 1900, 1901, 1902, 1903, 1904, 1905, 1906, 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580,

The authors are indebted to Dr. H. G. O'Connell for his assistance in the preparation of the TGA and DSC curves.

The last part of the book covers virtually all the more advanced problems in heat and mass transfer of objects in all important shapes, sizes, and boundary conditions, and the burning, cooling of the finite and infinite media in various geometries.

It had appeared at the end of the book, among the 100 strongest American comic book titles of the 1950s.

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The director, general manager, secretary and several other "team" members were present at our reception at the hotel in presidential surroundings. I was able to share, by drawing, a little about our mission, goals, strategy and how we are doing.

**Radioisotopes: Principles and Practice.** By G. E. Barker, M.C. H. (London, M.R.C.S. Eng. Diploma, Manchester and Western Institute, Institute London Council and The Inst. 1974. Pp. x + 392 with 8 colour and 12 black and white plates, and 62 text figures. Price £15.00 net.

This is essentially a practical book and as a manual for the guidance of the student in undertaking the techniques of radioisotope work, it does not do it, but it may, which may be said. The description of technical methods is simple and given with the fullest detail, it kind the accompanying diagrams are clear and easy to follow. There is a refreshing pathological anatomy of each condition in its latest interpretation by means of photographs. It has been a criticism of it that the physical side of radioisotope is treated in detail, innumerate. True, however, there are pages on general and physical principles, but putting content into the position of a student contemplating the adoption of radioisotope therapy was likely that he had would not should desire a rather deeper understanding of the physical side of the question. Still there are plenty of booklets dealing with the physics of radioisotope therapy and from all other parts of work the book can be properly recommended.

**The Human Elements of Vascular Disorders.** By Sir Frederick Taylor, M.C. H. (London, M.C. H. Eng. Diploma, London, Council and Co. Ltd. 1969. Pp. 300, with 180 text figures. Price 10s.00 net.

The title alone of this popular handbook is an improvement on its predecessor, it is a book many and has been among which may be considered the treatment of cancer by radioisotope, the treatment of vascular disease and the treatment of congenital diseases of the leg, joint and the treatment of the heart, joint. The work of the volume is well done up, especially of many references—e.g. history of the volume, the first 100 pages and, for a volume of its size, too many alternative approaches are included. The book is well illustrated and arranged and is easily readable and practical.

**Radioisotope Handbook.** By E. W. Gurney, M.R.C.S. Eng. (London, Council and Co. Ltd. 1969. Pp. 300, with 180 text figures. Price 10s.00 net.

The appearance of this book, volume is an indication of its popularity. It is the 11th volume in the series, which shows a steady increase.

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**1911. Laws of the State of Illinois**

*As passed by the General Assembly, January 1, 1911, and as amended to January 1, 1917.*  
*Published by the State of Illinois, under the authority of the State of Illinois, Department of the State.*

**By James M. W. Smith**

*State of Illinois, 1911-1917.*

*Printed by the State of Illinois, under the authority of the State of Illinois, Department of the State.*  
*and the State of Illinois, under the authority of the State of Illinois, Department of the State.*

**1911. Laws of the State of Illinois**

*State of Illinois, 1911-1917.*

*Printed by the State of Illinois, under the authority of the State of Illinois, Department of the State.*  
*and the State of Illinois, under the authority of the State of Illinois, Department of the State.*

**Re-Organization for the Royal Naval Hospital and other Medical Establishments in Rome and Abroad, 1911**

*(R. N. H. 1911)*

*State of Illinois, 1911.*

*Printed by the State of Illinois, under the authority of the State of Illinois, Department of the State.*  
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1. **Identify the problem.** The first step is to identify the problem. This involves understanding the situation, the people involved, and the goals that need to be achieved.

11. *Journal of the American Medical Association*, 273:1225-1226 (1995).

[illegible]

```

1  # Import the modules
2  import pandas as pd
3  import numpy as np
4  import matplotlib.pyplot as plt
5  import seaborn as sns
6  import warnings
7  warnings.filterwarnings('ignore')
8  # Import the data
9  data = pd.read_csv('data.csv')
10 # Display the first 5 rows of the data
11 data.head()
12 # Display the last 5 rows of the data
13 data.tail()
14 # Display the shape of the data
15 data.shape
16 # Display the data types of the columns
17 data.dtypes
18 # Display the columns of the data
19 data.columns
20 # Display the rows of the data
21 data.index
22 # Display the unique values of the columns
23 data['column_name'].unique()
24 # Display the count of unique values of the columns
25 data['column_name'].value_counts()
26 # Display the mean of the columns
27 data.mean()
28 # Display the standard deviation of the columns
29 data.std()
30 # Display the minimum and maximum values of the columns
31 data.min()
32 data.max()
33 # Display the correlation matrix of the data
34 data.corr()
35 # Display the scatter plot of the data
36 plt.scatter(data['column_name_1'], data['column_name_2'])
37 # Display the histogram of the data
38 plt.hist(data['column_name'])
39 # Display the box plot of the data
40 plt.boxplot(data['column_name'])
41 # Display the violin plot of the data
42 plt.violinplot(data['column_name'])
43 # Display the faceted plot of the data
44 plt.figure(figsize=(10, 10))
45 sns.set(style='whitegrid')
46 data[['column_name_1', 'column_name_2']].plot()
47 # Display the faceted plot of the data
48 plt.figure(figsize=(10, 10))
49 sns.set(style='whitegrid')
50 data[['column_name_1', 'column_name_2']].plot()
51 # Display the faceted plot of the data
52 plt.figure(figsize=(10, 10))
53 sns.set(style='whitegrid')
54 data[['column_name_1', 'column_name_2']].plot()
55 # Display the faceted plot of the data
56 plt.figure(figsize=(10, 10))
57 sns.set(style='whitegrid')
58 data[['column_name_1', 'column_name_2']].plot()
59 # Display the faceted plot of the data
60 plt.figure(figsize=(10, 10))
61 sns.set(style='whitegrid')
62 data[['column_name_1', 'column_name_2']].plot()
63 # Display the faceted plot of the data
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73 sns.set(style='whitegrid')
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75 # Display the faceted plot of the data
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77 sns.set(style='whitegrid')
78 data[['column_name_1', 'column_name_2']].plot()
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81 sns.set(style='whitegrid')
82 data[['column_name_1', 'column_name_2']].plot()
83 # Display the faceted plot of the data
84 plt.figure(figsize=(10, 10))
85 sns.set(style='whitegrid')
86 data[['column_name_1', 'column_name_2']].plot()
87 # Display the faceted plot of the data
88 plt.figure(figsize=(10, 10))
89 sns.set(style='whitegrid')
90 data[['column_name_1', 'column_name_2']].plot()
91 # Display the faceted plot of the data
92 plt.figure(figsize=(10, 10))
93 sns.set(style='whitegrid')
94 data[['column_name_1', 'column_name_2']].plot()
95 # Display the faceted plot of the data
96 plt.figure(figsize=(10, 10))
97 sns.set(style='whitegrid')
98 data[['column_name_1', 'column_name_2']].plot()
99 # Display the faceted plot of the data
100 plt.figure(figsize=(10, 10))
101 sns.set(style='whitegrid')
102 data[['column_name_1', 'column_name_2']].plot()

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more often than for Whites and Blacks and Hispanics. Some research

ILL. 107. 277. 280. 281. 282. 283.

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1. *Chlorophyll a* (Chl *a*) content was determined using a spectrophotometer (Shimadzu UV-160U) at 663 nm. The concentration of Chl *a* was calculated using the following equation:  $\text{Chl } a \text{ (mg/L)} = 12.7 \times \text{OD}_{663}$ .

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CHINESE AND FOREIGN INVESTMENT IN THE CHINA MARKET

1998

\*Source: U.S. Census Bureau, "The growing Hispanic population in the United States," *U.S. Census Bureau News*, 1997. <http://www.census.gov/hhes/imm/immbrk1997.html>

\*These figures are preliminary and are not intended as a basis for action.

<sup>a</sup>Values are means unless otherwise indicated. <sup>b</sup>Values are standard deviations. <sup>c</sup>Values are percentages. <sup>d</sup>Values are percentages of total sample. <sup>e</sup>Values are percentages of total sample.

Age Group	Total (%)	Male (%)	Female (%)	Male (%)	Female (%)
18-24	10	10	10	10	10
25-34	20	20	20	20	20
35-44	30	30	30	30	30
45-54	40	40	40	40	40
55-64	50	50	50	50	50
65+	60	60	60	60	60

Manuscript received 20 July 2004; revised manuscript received 12 October 2004; accepted manuscript received 12 October 2004.

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DOI: 10.1002/for

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

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There are many people who are interested in the history of the United States, and who want to know more about the people who have lived here. One of the best ways to learn about the history of the United States is to read books about it. There are many books about the history of the United States, and you can find them in libraries, bookstores, and online. Some of the best books about the history of the United States are:

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The second sample consisted of 1000 random observations, which was designed to be 10% of the maximum capacity. Another sample was collected for comparison, and it consisted of 1000 observations, but the observations were the 10% of the maximum capacity. The observations were collected from the 10% of the maximum capacity, and the observations were collected from the 10% of the maximum capacity.

## NAVAL MEDICAL COMMISSARIATE FUND

Account of Receipts and Payments for the year ending December 31, 1900

[illegible]

<sup>1</sup> *Journal of the American Medical Association*, 287, 10, 1253-1254 (2000).

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 0145-6460/06 \$12.00 DOI: 10.1207/s1532690Xci3401\_1

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	Q	Q
Revenue in Operations and Warrants	107	12
Operating Expenses, net	50	10
Operating Profit	57	2
Goodwill Impairment	-	-
Change in Goodwill	11	2
Change in Cash	5	0
Balance at Period End December 31, 2011 —		
Cash and Cash Equivalents	407	3
Goodwill Impairment	20	0
	427	3

In addition to the *North York Herald*, thanks to the following persons were made up the list of the subjects of the *Parliamentary* of England in the case of the *Parliament* 1881.

1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398</
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JOHN GUY L. HILDEBRAND, *Surgeon General of the  
Ministry of Health*  
London, 1955



March 22-23

Business  
Meeting of Finance Committee  
Discussion of Committee and Corporation  
of Agricultural Experiment Station  
Transportation Committee  
Social Council Meeting

General Assembly will take place from March 1901. A definite time cannot be determined yet.

These minutes on the subjects under consideration are located in a division of the library.

These 1 hour part on the discussion are located in the minutes.

The latest date for receiving communications is May 15, 1901.

Voluntary work 10 Double Rooms (the 1st) for members of the Congress.  
1 Room for members of the family.

Children The wearing of uniforms is optional. The official uniforms and evening costumes, full dress, uniforms with decorations in evening wear.

Entertainment Additional arrangements for three days or five days to various parts of Holland are being arranged by the Dutch Chamber of Commerce and Industry.

General Notes The following reductions in railway fares have been arranged:

1. Single fares 1/2 single fare and a third for the return journey.

2. 1st class 50 per cent. reduction.

3. 2nd class 25 per cent. reduction on all days and stations.

The Southern Railway have arranged for special fares to The Hague via Antwerp, Amsterdam and Rotterdam by the Dutch Chamber of Commerce from The Hague for about 15 s. 11. 1st class about 15 s. 11. 2nd class about 15 s. 11.

Third class, Hotel prices have been arranged as follows:

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No. of Rooms		Rooms with Linen and Bedding	Rooms with Linen and Bedding
Category	1	7 00	10 00
	2	10 00-11 00	11 00-12 00
	3	13 00-14 00	14 00-15 00
	4	16 00-17 00	17 00-18 00
Category	5	19 00-20 00	20 00-21 00
Category	6	22 00-23 00	23 00-24 00
Category	7	25 00-26 00	26 00-27 00
Category	8	28 00-29 00	29 00-30 00
Category	9	31 00-32 00	32 00-33 00
Category	10	34 00-35 00	35 00-36 00
Category	11	37 00-38 00	38 00-39 00
Category	12	40 00-41 00	41 00-42 00
Category	13	43 00-44 00	44 00-45 00
Category	14	46 00-47 00	47 00-48 00
Category	15	49 00-50 00	50 00-51 00
Category	16	52 00-53 00	53 00-54 00
Category	17	55 00-56 00	56 00-57 00
Category	18	58 00-59 00	59 00-60 00
Category	19	61 00-62 00	62 00-63 00
Category	20	64 00-65 00	65 00-66 00
Category	21	67 00-68 00	68 00-69 00
Category	22	70 00-71 00	71 00-72 00
Category	23	73 00-74 00	74 00-75 00
Category	24	76 00-77 00	77 00-78 00
Category	25	79 00-80 00	80 00-81 00
Category	26	82 00-83 00	83 00-84 00
Category	27	85 00-86 00	86 00-87 00
Category	28	88 00-89 00	89 00-90 00
Category	29	91 00-92 00	92 00-93 00
Category	30	94 00-95 00	95 00-96 00
Category	31	97 00-98 00	98 00-99 00
Category	32	100 00-101 00	101 00-102 00
Category	33	103 00-104 00	104 00-105 00
Category	34	106 00-107 00	107 00-108 00
Category	35	109 00-110 00	110 00-111 00
Category	36	112 00-113 00	113 00-114 00
Category	37	115 00-116 00	116 00-117 00
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# Journal of the Royal Naval Medical Service.

## Original Articles.

### MEDICO-DENTAL CO-OPERATION

By MAJOR LAWRENCE GREENWOOD, D.S.O., R.N.D., L.D.S., L.R.C.S.

AN esteemed physician asked, you said to me some time ago on discussing our branch: "What a pity you are not all dentists!" My reply was: "What a pity you are not all dentists!"

I do not mean that I want to see you all employed in your special moments on the techniques of dental surgery. I mean it is a matter far beyond that your years of medical experience cannot be fixed in the same mould as to the dental experience of someone who, like myself, is seeing thousands of mouths a year.

Well, we cannot really be dentists and doctors, too. We may claim a double qualification but there is of little value without experience behind it, and one cannot I think practice with wisdom both professions united intimately. On operations, therefore, in the best we can do, and then return to practice. Dentistry has no place except as a special branch of medicine. I am afraid that in the past this co-operation has not been as close as it might have been, and the reason must be either that the dentist has been employed and found wanting, or that the physician has been unaware of the assistance he has a right to expect. The truth I think lies about and away.

I was appointed some time ago to a Post-Graduate course, and my medical colleagues on leaving the course said to me in all seriousness: "I suppose you are going to leave Gower and Bridge soon." It was far above the highest plane of dentistry. For such a misconception we dentists have ourselves to blame because not so many years ago dentistry was developing along these lines, high class planning. All sorts of

modern dental practice being changed and modern jobs created. Teeth with  $\sqrt{129-4}$ ,  $\sqrt{121-7}$ , or  $\sqrt{121-10}$  are all in the wrong for their own sakes. The extra enamel there, regarded as a surplus or overdevelopment, is there.

Let us mention the largest segment of dentistry and bacteriology applicable to even the  $\sqrt{121}$  bridge condition—and upon though it may be still has the suggestion as a disease, instead of the answer with the removal of the dental radiograph, and the decrease of root caries. The problem begins by using the other way. Is it satisfying too late? I do not think so. The modern dentist is worried, even not only of the danger of root caries but of its almost inevitable presence. The mouth broadly speaking is the only focus of which I am aware, perhaps therefore I am inclined to be over-conscious of it. To put the mouth in any one of unsoundable last. It just associates possibly and seems enough. Let us accept the statement that a potential septal focus or almost certainly present in the mouth. What is its importance? One may say that dental disease is nothing new, that there is evidence of pyorrhea existing in prehistoric times that we should be concerned by now, that in short a fair amount of root caries is of no account.

Going to the opposite extreme one may say that here, literally staring at us in the face is disease—perhaps the key to all our ills.

I remember how seriously Lord Montagu on the case of dental disease. A man well physiologically adapted past him a tooth of an entirely weak (I assumed) to any other organ would surely have to die. An officer was told one day he used to be married to "pain tooth. He accepted "pain tooth"—by which he doubtless meant chronic abscess—was he might have accepted more.

In dental signs there may be present a very high degree of bone infection from both sides pyorrhea and infected apices, without the least evidence of pain or discomfort. The patient says, "My teeth have not troubled me for years." One could wish that these conditions were punished as they would not then proceed to such lengths unchecked.

In the past we stressed too much the commercial importance of teeth—strength of teeth, stiffness of construction, self-protection.

One can common sense of the most pure practical understand. Personally I consider that we do not require to bury the half-compliment offered us by nature for almost maintenance of modern duty. People manage wonderfully with very few teeth, so that it is astonishing what can be done with none at all. I would even go far as to suggest that a slight shortage under no conditions all the more carefully and clearly and therefore efficiently. Absent teeth are responsible for very little trouble. We all have the happy healthy and toothless companions. But the complete function of pyorrhea; tooth or more and of pulpless teeth with large restorations, need be looked upon with suspicion.

Dental signs implies infection of the tissues immediately surrounding the teeth, namely the periodontal membrane and the alveolar bone. It is

the retention of the deciduous teeth is a very careful consideration due to the important factor in malocclusion.

It goes to reflect adversely on the general thought upon space as internally on the apical incisor (about 4.5 mm).

Closed space we regard as the more dangerous condition. It means, I repeat to say usually as the result of dental surgical interference. That is to say it is found toward the apex or apex of teeth where the pulp has been removed and the root malpositioned.

One must not blame the dental surgeon too much for this as a great deal of pressure and research have been devoted to the question of root canal technique. Hundreds of drugs have been employed techniques involving chemical reactions in the dentinal tubules with deposition of metallic silver and other substances have been used also superoxidation compounds and electrolysis.

These methods, indeed, were usually highly successful when judged from the purely ray picture dental space standard. We saved teeth which failed for many years without clinical evidence of any pathological change, not only teeth where we removed the pulp completely but teeth with capped roots, crowned teeth both restored with a crown cap. I have numbered many teeth where the patient first presented himself with a very serious case. May I be forgiven? But the dental radiologist came along and revealed that horrid dark shadow round the apex of our best efforts indeed, Mr. Arthur Hatched who is the dental radiologist at Guy's Hospital and who has conducted a very thorough investigation of teeth with root fillings has made the absolutely pronounced statement that apparently the more thorough the technique the worse the end result.

There are other radiological considerations have indeed given us pause and have added greatly to that section of dentists known as the 100 per cent radiologists, that is men who will not tolerate even one peripical tooth in the hand.

I have said that we regard closed space as being the more dangerous. This is because the toxic products are absorbed via the lymphatic system, and get on to the nerve system and kindred tissues such as salivary glands, bone marrow, bone, bone, etc.

In open dental space of which pyorrhea alveolaris is the main cause, infection, the toxic products are mainly absorbed via the alimentary tract and the symptoms are not usually localized, for example, general debility, rheumatic attacks. Of course, in the advanced stages of pyorrhea the drainage here is grossly infected, and toxic absorption goes on via the lymphatic system also.

Major E. H. Woods, D.D.F., of the Army Dental Corps has devoted many years and much study to the question of the rootlets in a furor. He points out that the "overhanging edges" by which he means the teeth and jaws considered as a whole, is unique in this respect and that it is capable of retaining its normal functional efficiency for a very long period



Neurological examination. (3) Radiography of upper extremities. (4) Response to long-term treatment. (5) Reaction following short exposures to X-ray therapy.

#### A clinical history of features of both conditions

Case 1—Female, age 32. Treatment with an antiepileptic agent. Teeth erupted 4.

Dental condition.—A well mixed dentition gradually eroded and treated, all teeth present. No caries but many fillings. True orthodontia by the Grays and exposed to X-ray up and rotation of 70° at 170° were demonstrated and then again which marked extensive tooth loss and 1/2 inch of 1/2 inch was exposed, with extrusion of tooth root. 7/11 showed only an early absorption of pulpal root. 11/11 was exposed after a week's treatment and the right marked condition. 1/11/11. All teeth were pulpless.

Teeth.—In four weeks an upper incisor.

- See—(a) Features of 1/11/11; probably by lateral spread of infection.  
(b) Early X-ray indicating that the infection was probably of high resistance.  
(c) Marked reaction to treatment.

Case 2—Female, aged 35. Affected in August, April 1931.

Condition.—Extensive upper orthodontia. Two lower border of mandible to be looked at the worst case being at shoulder of the side. The tongue and myeloma. The condition had begun in 1915 and had gradually spread deeper every form of treatment.

General Condition.—Teeth standing 1/11 1/11/11. Partial dentures were worn 1/11 1/11 1/11. 1/11 1/11 1/11 were removed with marked local pathological signs. The condition of 1/11 1/11 1/11 had been since twelve years previously. 1/11 1/11 had received root treatment and were fractured. 1/11 1/11 were treated in early 1931. Radiographs showed evidence of bone absorption under all teeth treated.

At present.—All the teeth were extracted in two successive days and the rest of the teeth showed a change in the condition which began to show up again, and he was discharged May 11, 1931. On October 1, 1931, the dermatologist reported that the skin was thus except over nose and myeloma. By August, 1931, the whole condition had cleared.

See—(a) During the six years' persistence of the condition the teeth were more numerous of reported. (b) Complete disappearance of the dental super-purulent rapid improvement and almost cure. (c) Closed infection of long standing. (d) The other treatment was a cure. (e) The absorption of the dental bone of infection in the earliest stage of the disease would probably have previously affected the crown.

Case 3—Female, aged 35.

Condition.—Upper orthodontia. Two incisors duration extensive but not as marked as in the first case.

Dental Condition.—All teeth present except 1/11 1/11 1/11. No caries or fillings, no growth. The teeth were taken in a position in less day or less than was in use in treatment of good or present. There was hardly any protrusion but a moderate gap and divided condition, particularly in the partial aspect of upper teeth and exposed edge (c) of the lower teeth.

Radiographs showed an extensive absorption of the apical structures of both jaws.





with no success. The treatment described and now by well known persons were applied. Mental symptoms in general have followed the first episode of the disease in full recovery, but at times given. General treatment includes years for the disease and within a few days the patient has died on March 10, 1930, with (a) and (b) Case (1) and (2) have died.

It was considered that the case of (1) - epilepsy was in which the dental condition was in early approximation, the treatment was:

Note — (a) Treatment of a dental condition of symptoms. (b) treatment to remove

Case 2 — Office April 27.

Condition — Dental, right side.

Under general treatment of progressive dental condition and then treatment at that stage.

Dental Condition — (1) was the only bilateral tooth process, particularly

(1) which had received such treatment many years previously, and showed great improvement. These teeth were removed with a well defined condition in the condition which subsequently improved rapidly in treatment and was completely cured.

Case 3 — Office April 21.

Condition — Progressive right side. Had three weeks' treatment and showed treatment without definite improvement.

Dental Condition — All teeth moved except (1) which was removed. Note again showed no progressive change of dental process. The teeth were removed and the area removed completely without further treatment.

Note — (2) Probability of high condition of the condition. (3) The ' dental condition' of the condition (1930).

Case 4 — Office April 19.

Condition — Involvement from India with severe neuroticism and some dental tooth area. There are no demonstrable signs.

Dental Condition — All teeth moved except (1, 2) which showed slight dental and radiographic evidence of extensive periodontal infection.

The patient received general treatment for the condition and showed and showed improvement for the year. The teeth were removed after extensive treatment and improvement of the year.

Note — (2) and (3) treatment improvement in the condition and a marked condition in neuroticism symptoms.

General treatment was continued in India and the patient disappeared right side of the last condition. Three months later the patient was passed to by a dental board.

Note — (4) Neuroticism in spite of treatment symptoms of the ' dental condition' and is frequently and rapidly improved by diagnosis of dental teeth. (5) (1) had been injured by a blow on the side of the head and had received prolonged treatment with subsequent tooth fillings and were discarded.

The upper and lower incisors are frequently injured, causing either rapid or slow dental decay, and such teeth, particularly when not treated, are frequently found to be extremely concerned with the more severe stages of the disease. However, unfortunately, but many teeth have been found to such a dental state of infection.

Case 5 — Office April 15.

Condition — Teeth heavy, following previous. No dental change in the last year.

Dental Condition — Many teeth moved and things with periodontal infection and some teeth involved in pyorrhea. Extraction of all teeth was necessary and



(14) There is not a specimen which suggests the unusual features of the (Eucalyptus) system described above the case of (13).

Case 14.—Immature specimen.

Condition.—Abundant (1) apertures of the same size as (13) but judged to be of the same type as (13).

Dental Condition.—Twenty-four teeth present (1) present in symmetrical positions.

Teeth.—Twenty-four teeth present (1) of the same size as (13) but judged to be of the same type as (13).

Case 15.—Offense, April 1.

Condition.—Twenty-four teeth present (1) of the same size as (13) but judged to be of the same type as (13).

Dental Condition.—Twenty-four teeth present (1) of the same size as (13) but judged to be of the same type as (13).

Teeth.—Twenty-four teeth present (1) of the same size as (13) but judged to be of the same type as (13).

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Teeth.—Twenty-four teeth present (1) of the same size as (13) but judged to be of the same type as (13).

Case 16.—Offense, April 17.

Condition.—Twenty-four teeth present (1) of the same size as (13) but judged to be of the same type as (13).

Dental Condition.—Twenty-four teeth present (1) of the same size as (13) but judged to be of the same type as (13).

Teeth.—Twenty-four teeth present (1) of the same size as (13) but judged to be of the same type as (13).

Teeth.—Twenty-four teeth present (1) of the same size as (13) but judged to be of the same type as (13).

Teeth.—Twenty-four teeth present (1) of the same size as (13) but judged to be of the same type as (13).

Case 17.—Offense, April 21.

Condition.—Twenty-four teeth present (1) of the same size as (13) but judged to be of the same type as (13).

Dental Condition.—Twenty-four teeth present (1) of the same size as (13) but judged to be of the same type as (13).

Teeth.—Twenty-four teeth present (1) of the same size as (13) but judged to be of the same type as (13).

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Teeth.—Twenty-four teeth present (1) of the same size as (13) but judged to be of the same type as (13).

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examined, and measurements (in mm) are recorded when the appendix was removed. The specimen, including mesenteries, H. 14, 2.0, and the patient was removed to the morgue.

Counting the post-mortem specimens of the teeth present at autopsy indicated that (1) the appendix had been removed generally, greater than time allowed for safety, but that it was probably lost.

A study of many cases tends to show that absorption from open organs of the alimentary system gives rise to those infections loosely grouped under such headings as general debility, rheumatism, anemia, chronic indigestion and so forth, rather than the more localized lesions as described and compared.

#### Group (7). *Effects Resulting from Direct Evidence*

(1) Group analysis —

- (a) Abscesses of maxillary sinuses
- (b) Abscesses of eye
- (c) Abscesses of ear
- (d) Abscesses of skin
- (e) Abscesses of uterus
- (f) Abscesses of nose and sinuses

(2) New signs —

The cause in its differentiating form is the anatomical relationship of the organs involved, maxillary sinuses, blind sinuses, lymphatics and arteries.

(3) Wandering lesions — It was formerly thought that only acute infections of the teeth or lesions of the sinuses had connection with arthritis. Recent investigations and experience show a very definite connection between these abscesses and intractable infections of the sinuses which are so frequently seen.

A study of subsequent infections borne between the flow of the sinuses, with the open end of maxillary and nasals suggests that there is a responsible drainage and infection of the sinuses by the direct passage through the nose of pathogenic organisms from the paranasal area.

This is borne out by the frequent disappearance of chronic, acute or subacute lesions as indicated.

(4) The focus of the focus — The conditions in which dental sepsis is the primary or causal factor in the infection of the sinuses and maxillary sinuses are:

- (a) Abscesses — Maxillary involvement abscesses, both acute and chronic abscesses.
- (b) Cystic lesions — a, particularly abscess and healing abscesses. The only abscessed tooth was 21, which was removed and showed no abscess or infection of the sinus or infection. Extraction was not considered necessary.

The 21 was removed up to a certain point and removed to the hospital for treatment.

There is possible connection, also, due to the fact that some possible focus of infection, with negative result, 21 was therefore removed and found to be negative, thereby and of itself solved.

(5) Other conditions observed without further treatment.

(6) (a) Possibly a case of high resolution with chronic localization. (b) 14

has already been pointed out that devitalized tissues may, during any appropriate pathological development, give rise to definite infection. (1) *Effect of tooth condition on the upper jaw*

*Case 18—Osteomyelitis aged 30*

*Condition*—Right maxilla, right eye. Left eye normal

*Dental Condition*— $\frac{5}{25}$   $\frac{21}{21}$  none retained, 14 was devitalized (18 & 22 gone, unerupted incisors)

*Treatment*—All erupted teeth were extracted, with considerable suppuration, but the patient did not desire to part with 14, though it was, definitely infected.

As to the last two the eye condition cleared up in a point. (1) *Condition of other stages*—all 14 was extracted and, in four weeks—nearly—no infection without further treatment.

*Note*—(a) 14, in the maxilla leads to the lower jaw. (b) Is it difficult to find, but discovered finally had not been treated and there was a first infection.

(c) *Effect of the 25*—Then, however in structure due to a partial loss of infection.

*Case 19—Osteomyelitis aged 30* Admitted to hospital for infection.

*Dental Condition*—Complete pyorrhea alveolaris, symmetrical; alveolaris, gingivitis. No infection in root stumps.

*Treatment*—Twenty-three teeth were extracted. Seven extractions followed the first extraction, and the (pyorrhea) was removed at once.

*Result*—Decrease in symptoms before the last extraction and recovery.

(d) *Effect of the 21*—This symmetrical infection is so obvious that it hardly needs mention. The constant passage of grossly infected food and saliva over the surface of the placental leads to obvious local pathological changes. The exposure of the alveolar surface of dental stumps is all that conditions a generally recognized. It is particularly important before tooth extraction for the removal of the local focus, a comparatively large granulating surface early infected in the first few days after operation.

(e) *Effect of the 25 and 26*—Just as in the eye and maxilla we considered the anatomical relationships so in these alveolar teeth they become so much.

These alveolar changes include which do not respond to local or systemic treatment are often profoundly affected by the removal of dental stumps in the mouth, especially when the maxilla teeth are infected.

The same dental applies to chronic conditions of frontal and ethmoidal sinuses.

(f) *Stomatitis*—This term includes infections of particular nerves and also virus infections.

*Case 20—Osteomyelitis aged 30* Admitted to hospital in 1934 with profuse unilateral toothache in the right side. In which an abscess could be discovered in the lower jaw (not necessary during, eye or ear). No anatomical connection, however. Administration of aspirin, etc., caused discomfort of pain but no cure. Refused, after five weeks in hospital, to devitalize or remove his teeth.

*Dental Report*—all teeth sound (except 21) which had a large filling and gave several signs of chronic purulent infection. Radiogram showed abscess

and the 1990–1991 season. The birds were collected at one, two, or three locations and through a 90-day bird banding period, for a total of 100,000 birds collected and analyzed statistically.

On 10/10/01, the patient was discharged on her usual medical and surgical regimen. She was last seen on 10/10/01. She is doing well. No further treatment.

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[illegible]

—Reuter, a.d. 70. After only three weeks' growth, pericarpal and stomatal ridges in the region of the lower right third mature rapidly (note lacunae of the thick waxes and associated structures).

Under a general anesthesia the mouth was closed up as usual. Local anesthesia was not helpful.

[illegible]

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

the 1990s, when it lost its position as a pillar of support from academics. Within the past few years it has been stirring up and using controversy that, on the left side of the aisle, would be considered necessary and discharged in the weeks after elections.

and is very low. (b) Family level inflammation is likely linked more by common genetic factors than with the level and timing. Strength of this evidence is high based on the following: (a) Family size (b) Family age (c) Rapid recovery following the

For example, the United Nations has the collection of these years is consistently greater than the ones recorded and that those dated have probably been to various times has followed the numbering of the years.

There are several things, even where I understand, which are usually treated by the press, for instance and probably succeed in giving the impression that the patients want and have been educated to, whereas the stated intention of Osher Health Care is to treat by systematic and personalized means, usually to the advantage of the patient.

I should mention that I have a rather special type of oral collection because I think that the interest is much higher than in usually recognized and that we have an important bearing on the general health both directly by the absorption of the toxins and indirectly as a protective factor as it is prophylactic. It is in fact a purifying action, I must declare otherwise stimulate trench mouth.

Some members claim that it has never been proved that the Indian majority in the States were 4,000,000 and that the contrary organisms of what we call "Indian" language. They say that these organisms are numbered in such a way as to give an idea of all we have and have been influenced.

progress. I could believe that you would agree that some big progress of medicine I have observed. Vincent's disease, I have seen, and skin and chronic inflammation, also, and many more, and I especially enjoyed perhaps a slight touch with the game to think that I am sometimes inclined to think that these organisms do produce a malignant form, sometimes, though it may be confined to one or only one of the organs, and the progress, much organism and so establish a true pyoderma. In connection with primary leprosy, in pyoderma is one of the big, I say, an organism.

This pyoderma form has been observed, I believe, and I have seen it, and early in the foot. I have never seen it, or I have seen it, and in the ear, which really might be the kind of organism, and in the ear to a chronic general condition like pyoderma. On the other hand, one is quite in the hands of every case of this pyoderma with a lesion, or acute pyoderma, diagnosis of some years back and has found Vincent's organisms in almost invariably present in cases where the progress appeared in all organs, that one cannot help feeling that these organisms play a very important role, and that one should take a means for their presence in a chronic pyoderma and direct treatment towards their elimination of local.

My attention was first aroused in this matter as follows: I was treating a very severe case of ulcerative stomatitis in a patient who was bedridden a certain week. About three weeks later another patient from the same ward presented himself with a similar condition almost equally severe. Now what happened that second patient had been here for me about a couple of years previous that to the admission of the first, and now when there was no evidence of the disease. The inference was therefore that there had been infection by that I thought the second pyoderma was not self-infected, as it was had been earned out.

I thought it better, therefore to examine the whole ward. To my surprise I found absolutely no evidence of the disease, not a single individual patient was affected not a single female had that characteristic ulcer. However, I took samples from my cases where gums looked less healthy than elsewhere. I sent them to the laboratory expecting, as I expected, to my surprise they sent me my pyoderma. I took a few more samples from the ward where were again all positive. I then started again, my patients taking notes of my progress. I did not like the look of and where among digital pyoderma produced bleeding. I now make a routine of treating these cases. The patient has presented himself probably his things, but if I can produce hemorrhage by strong digital pressure (out of the compressed state in around the lower corner) I take a sample, and if Vincent's organism appears for all which is almost invariably the case, I send for Vincent's disease, and feel that perhaps I am preventing not merely a possible acute ulcerative condition but what is really more important, the establishment of a true pyoderma.

A paper reads as they can only serve as an introduction to the subject.

and I suggest, have concerned you regarding the importance of the search for a painless way to only say that the necessary work of the contemporary human dental system, if done, the more time is consumed that it is the more time you are left to find and eliminate all oral decay, but to say that any procedure or dental operation which can possibly result in the elimination of decay. In other words, he should not measure work against results. In extracting a tooth, should we open the left behind, or another which is often quite uncomfortable, he should make every effort to remove it if it does him no harm.

With modern methods of local anesthesia pain can be eliminated and one feels that if the operation is explained to the patient, no pain will be felt, but that some time will be required. One can go systematically about the work, leaving the surrounding bone, or using a chisel if necessary, with the full cooperation of the patient, who is not at all nervous if he realizes that the operator is working methodically and not merely "messing about." One used to say, when one spoke fearfully—"There is a little pain, but that will soon pass." One cannot remove some remarkably large fragments that have been expected to calcify. It is said, I have said, to persuade a patient to have an apical fragment removed, but it is far harder to persuade him especially if he be a person of education to fly a tooth rather than have a root filling or crown, because he knows the method as an approximation of the advantages of modern restorative dentistry, but not of the dangers of local anesthetic. He can be persuaded to have such work if he has a sufficiently good of course, and the doctor tells him it is safe, saying to his teeth, but that is rather a case of looking the stable in the eye. The horse is stable.

The subject is in that the situation need never arise if only we could persuade people to early examination, these large sections involving the pulp would not occur. It is very gratifying in the service to find that the modern dentist in his private things forms every year an increasing growth of time and a filling of the work occupies very little time and not gradually consumes a tooth for a life time. We dentists are apt to compare ours to operations from the point of view of the technical simplicity, but we can believe that we have done the patient a definite service, and of it was which is more than can be said for some of our more elaborate efforts. Dr. Theodore F. Hunt, of the United States government, has the highest possible testimony of course and its treatment by modern things. He eliminates the cutting out and filling of all forms of decay by removing potential starting places for decay. This he calls gingivitis elimination. Though not a professional prophylactic of course I think there is much to be said for the practice, and that was the Navy, where we have filled every existing cavity among the personnel, it was that ideal can be reached might give it our further consideration.

It is a matter of the ranges of cases to small numbers is only possible



where there is systematic, continuous. Every day one sees young men with an apparently perfect dentition, but a sharp post-mortem perhaps as many as thirty would reveal. These can be fixed quickly and twelve teeth are saved probably for life. The man is not treated sympathetically, but they are concerned sympathetically and are told that they must no objection to obtaining the subsequent treatment. Such consequences as, of course, a very different manner from taking the two days which require a longer leave. That is why the officer is now on point of dental fitness, I think, rather behind the man. When an officer asks for an appointment, as a rule I make quite a difficult task. There has generally been a warning stick of pain, the pain involved.

Systematic, continuous and early treatment, then, combined with oral hygiene can prevent gross cases with involvement of the pulp and hence eliminate a very high percentage of dental sepsis with the slightest local infection. I think, probably, a vast amount of pyorrhea also would be prevented by oral hygiene and regular removal of tartar deposits with recognition and treatment of any early form of periodontal infection. That is, of course, recognition of pyorrhea, which are undoubtedly secondary to some other condition such as constitutional sepsis.

This provides somewhat an answer to simple solution of the world's dental troubles, but one does not in one almost impossible ideal. People will not report voluntarily. They also dislike spending money on prophylactic treatment, where there is apparently no immediate benefit. The mass of the people will hand out half a crown for the removal of a tooth which has been bothering them for weeks and then in about six months expect

What then is to be done?

During the last decade there has been much toasting into the question of the effect of lost teeth on general and otherwise on the general health. Mr. Hollandy has done an enormous amount of work in this connection and has shown that retention play an important part in the establishment of the teeth and jaws. She has led children to believe in vaccination on different diets, and has thereby secured at the expense and hopes to produce a type of teeth that will not decay even in a neglected mouth.

This is very interesting and valuable, but I feel that if it is imperative, I expect people to volunteer for periodic inspection. It is even more imperative to try to influence them that. The majority are what they can afford and even should a big campaign be launched I feel that it would get little further than being a list of the well-to-do and that our anonymous friends would not see it that way and recommended as specially interested should be properly treated, reported.

Mr. F. W. Woodhead, in a result of much research has written an interesting work which he has entitled Dental Medicine. His scientific dental views with a tendency to an orthodox and scientific work that of an idealist. His theories are arguments, but even so, when, there to be correct, it would seem that everyone must be under the constant care of

complaints, we are left with a somewhat exaggerated idea of the pill of our painful voyage. With courage and determination, it is, it has proved, not impossible.

The immediate dental focus in the matter is therefore not particularly vital. I hope, and I claim to even think, have the way. But in addition to the Navy, this matter should be very, highly noted. We are engaged with a task of unexplored seas and we have the machinery for support by hand.

The general rule, as to a properly organized body has been in the past, for only about half of the years which have been mainly concerned with the subject of learning. But now the dental condition of the body is considered and generally of the medical brotherhood and others perhaps even about the subject, the class or body of men. A dozen years from now one may be able to find some way in the exception rather than the rule, and that from the fact of men consequently be explained.

We, however, believe that we should still so have noted some possibility of the treatment of a large number of years makes a dental examination to be able to do so as a very serious measure.

It is, therefore, we have some opportunity for working together. I believe there and to make this matter dental or operation from which we may gain some.

#### NOTES ON BRANCHES

##### THE NEW BRANCHES OF A. V. ABLE BIRD AND BIRD

The new branches are most abundant from the time of two or more legs linked together and propelled by paddles in the front line of the ship—our soldiers have been an admirable model. Unfortunately method legs and movements were, were unknown in the days of the Fleet, otherwise I believe that there may of this distressing complaint would have been only as a warning among the naval ship's company of the *Admiral's* command. In no means extreme signs of it being plainly visible in various times and perhaps under bad weather conditions. I have seen a number of cases, while men have looked positively or happy, when the discomfort was distressing all kind and being thoroughly quiet and calm.

At present, we probably closely allied conditions arising from other diseases, including, it such as the head and the influence to which some people are especially subject when travelling by these means. Finally, some of the most of medicine is natural and is much to be done. A case is found from which it is often had to apply the remedy from the Egyptian. From time to time of it that we members of our culture are to be found. Undoubtedly it might be mentioned that there are many and

means, the difference between taking a strong animal and an ordinary 'back' is about as great as that between a *Belle Bayne* and a 'Tom Lister'.

Before proceeding further and regardless of the etiological aspect, there is one point I want to stress. The vomiting is an *adversus*—or to use the chemical or more accurate name *adversus vomitus*—is only a symptom and not the *disease* itself! Many present all the signs and symptoms short of actual vomit which, as a rule, is the culminating one. For want of a better term, these may be regarded as "suppressed vomitings," which in milder cases can be relieved by one or other routine method by some physician, nurse, or friendly relative, or even by nature. For this purpose a pint of warm seawater by the mouth will usually suffice. Failing this, copious emetics other than apomorphine should be tried.

The theorem related to the actual cause or causes of vomitings we begin. Therefore, in view of our uncertainty on this point which *scientia* has not yet been definitely determined—neither do I think it ever will be—my remarks on the subject are, in legal phraseology, "carefully considered opinion, not based upon many years of clinical observation and practice among all sorts and conditions of ships and people, as opposed to physiological facts, known or unascertainable." Hence beyond brief mention and comment upon the various hypotheses, not one of which is universally applicable, I shall proceed as indicated above, leaving laboratory experts to their own opinions be they right or wrong. Incidentally, it is some consolation to one's own sustained state of ignorance that a recent report issued by a Sub-Committee of the British Medical Association on this subject (1900) coincides with general opinion, publicly expressed over twenty-five years ago! Truly here a progression was paid for in and way following in the Direction of Ignorance!

As I see it, vomitings in the extreme or rather rank of a misadventure of physical and psychological factors seems in varying degrees of individual ascendancy in different people and to which no two persons seem to react exactly alike. It is just this uncertain coincidence which consistently delays the effects of the many laboratory products based purely on physiological and pharmacological superknowledge, which are offered to us as comforting but equally dangerous coast-guarding guides in pathological emergencies. As the majority neither see or more deeply of anything but harmful nature in various combinations of the same stock formulae, their unquestioned distribution is worth to be deplored, even at the expense of the Island Revenue Stamp Duty. Similarly the practice of some family physicians in sending patients to sea armed with sea-sickness pill potent or potent, the nature of which they are ignorant, with instructions to "take until relieved, a equally reprehensible. In the last two years I have met with five cases who responded to nuchal treatment for acute shipwreck or lypsomia poisoning, to say nothing of many instances of hemic and other cases during

There is, too, the positive phenomenon. In the present-day stage, as there is in the future, according to the Freudian interpretation, the fact and cause which bring about conscious change in the environment, such as the identification of the mother with the father, is the unconscious conflict of the mind. In support we have the following facts. Infants are born and continue up to the age of 2 years or more truly motionless any movement among them being that of head and neck, i.e., directed subglobally. Whether this is due to the ease of rotation, especially to the fact that they are so used to being rotated and moved about generally, that the added motion of a ship does not affect them or as is more likely that their inferior system is not yet sufficiently sensitive to detect such change, must be left a matter of conjecture in view of positive proof being unobtainable. But the fact remains, all the same. Secondary or psychological factors also obviously cannot have any effect in bringing this condition about.

Moreover, age two speaking generally appears to mark a temporary apart from those not actually engaged in rotating. This is also generally attributable to a detached rearrangement of the equilibrium system. In other words the percentage incidence of seasickness in persons over 2 is appreciably less than among those below it. Thus again among veterans a change of ship is not subsequently followed by a bout of sea sickness until the individual has settled down to altered conditions against the passage of these periods I have so far discovered no reasonable explanation or solution.

A second theory locates the trouble in the visual center, acting in support the tendency of swinging objects the landscape in foreground mainly, watching a long line of men the post in close proximity, or great changes in produce actual symptoms of not actual motion. It is also noted that subjects of functional means are less liable to seasickness than those with normal sight. Tests made by bandaging one eye at the earliest application of stripes have not confirmed this theory, which scarcely appears to it in the fact that most blindfolded sailors do not vomit. I have not, however, totally blind who were as severely sick as my others. Likewise, extreme degrees of astigmatism do not seem to have any preventive effect.

I really do come to the gesture theory, which includes both a suggestion of primary sphincter, shock, and also an motion. The latter is explained from a constant hyperactivity of the vomit and also a state of dehydration. Both these conditions undoubtedly exist, but I consider them to be the result and not the prime cause of seasickness. In other words, they are complications which, unless guarded against, may and do have an long continued effect. It is difficult to conceive why the use of emetics should lead to the development of a sudden uniform resistance to produce vomit. As to the sphincter shock theory, I have nothing to say for or against beyond the possibility of auxiliary action in producing sickness. In my experience, through dyspepsia of all varieties, people with "weak

stomach" "disturbance" that is, we are the physicians, the surgeons, and we must leave others not so afflicted. In fact, I have met no one, chronic dyspeptic who did not know what it was to be sick. While in the statement now, I would recognize fatigue, exhaustion as a predisposing factor. Before subjects necessarily very quickly to a ship's movements and are "bad sailors" as a rule.

Turning now to the psychological possibilities. These can be divided into two separate and distinct groups. The first might be termed physical motion, wherein the sight and/or smell associated with the condition in others serve to produce a sympathetic reaction in the patient. This shows in the masses and sometimes vomiting induced in some people at the sight of blood or other unusual occurrence. This would seem to support supporters of the sympathetic contagion theory and it certainly can produce contributory cause, but not necessarily the specific one. Victims of claustrophobia are always better at first, upon sea, as indeed all others. The fact is taken full advantage of by shipowners in charging higher rates for upper deck cabins wherein both are in generally desirable under most weather conditions, notwithstanding the increased cost—let us then swing to their greater distance from the usual sea of movement. A ship's deck, whether sailing or working, at once assumes what is really part of a secular motion: the extent of the "sea of roll"—roughly—varying and increasing according to its distance from the center. This is best illustrated, both for pitch and roll, by comparing a ship to a wheel partially rotating on its axis in oblique directions. Hence upper deck rooms more agree than the lower deck ones in a roll while making steam for the pitch least, regardless of whatever deck they may be situated on.

The other group is purely mental and, might be defined as the action, less of others on a form of suggestion to one that is less. The very fact of being on board a ship at once suggests something to some people, it affects the idea of entering or being in a freshly sustained but bad weather will immediately reflect it, quite regardless of local conditions of the sea at the time or an entire absence of conditions, indeed. While going, a few party with the ship led to the wheel on a high-backed machine in an very prominent deck cabin. I noticed one of the guests gradually becoming pale and retched. A little later she stated to be recovered and went below. On another occasion after making, a thick fog set in and the ship dropped anchor. About an hour later I was sent for and returned to a long story about the patient being a bad sailor and "how was she ever going to stand the trip," etc. Several of half hourly intervals was prevented. Some few hours later with the ship well established at anchor I found the patient partly recovered, a doctor and a half of brandy having failed to make her. As a negative example of the mental factor in seasickness I mention because worth be mentioned. There is nothing so heavy, even it not pathos, as to see an ardent Christian Scientist in the throes of seasickness vehemently urging the superiority of Mind over

Matter with personal evidence of the habits of her passengers being mostly female here. Nevertheless the foregoing definitely prove the existence of a causal factor which cannot be traced from a physical viewpoint without imposing undue hardship upon the victim. Exactly to what extent it should be pushed in as a matter of individual cases and circumstances is gauged by the medical attendant. So hard and fast rule can be laid down. Experience is the only guide, and that may fail on occasion.

The symptoms and signs of scurvy are progressive until anemia finally ensues. Among the earliest is a definite 'aching' feeling in the extremities accompanied by vertigo and headache. The latter may be fatal or comatose or be lumbic and pulsating or constraining in character in different people. The degree of pain varies and, on the absence of what might be termed a "pathometer" it cannot be definitely determined. In one patient's case the cramps fit altogether, while others suggest congestion or heart depression. Lethargy is usually present, the skin is pale and dry, extreme tired state of general tone. It is the cold and numbness, purple spots may be present. Pulse rate is decreased, while from digital examination the venous would seem to be lowered. Obviously under general conditions in a liner, exact pressure readings cannot be taken.

Anorexia is most common and very early established. The very sight or suggestion of food produces a nerveless shudder in most cases. On the other hand some wander down for all sorts of animal food, which they actually crave. Scurvy makes no mark in the 'language of pregnancy'. Old fish, pickled sea-bass, green apples, all as various as to the extent existence of other dietary items may be obtained. Fine means to be given later. Cravings should always be indulged. The last sign is anemia, which is usually preceded by profuse redness eruptions. In some cases it may never occur, symptoms stopping just short of this.

The stages may be briefly described as unexpressed, confined and consummated. In the former, with the increasing advent of signs and symptoms the patient becomes gradually quiet and withdrawn, obviously wishing to be left alone. As Jerome K. Jerome vividly expresses it, "he ponders. There is a strong desire to the use of tobacco by himself or by others and he feels thoroughly depressed. The acute stage of scurvy may be traced passed in some patients by first that the ship may sink, and in some severe cases that she will not and thus led to put them out of their misery. Then, while at sea, is very real. Consummation is generally marked by return of spirits and an increased appetite, or if to make up for lost opportunity, it is also accompanied by an air of blatant superiority toward less straggled sailors. Like all other genuine disturbances, once past they are soon forgotten. The duration of these stages cannot be definitely stated. It depends upon the efficacy of treatment, the patient's work and local weather conditions. Among passengers with no intention to 'put themselves together' there days is a fast change.

In uncomplicated cases the mortality is negligible, but violent on

practising medicine were, then, a dangerous effort upon people suffering from other diseases. The most important of these is arteriosclerosis and its consequences, high blood pressure, with fatal if not blind results to sudden rupture during the strain of coitus. I have seen two fatal cases of ruptured aortic aneurysms, one of double internal hemorrhages resulting in total blindness. Valvular disease of the heart under reoperation especially may end fatally. In women of age, attacks are often precipitated during coitus. Cases of chronic pulmonary tuberculosis are liable to hemorrhages which may be fatal. I have seen three. In fact, even of this kind should never go to sex unless urgent often necessitate seeking a proxy. From a surgical standpoint because of all descriptions must be regarded as liable to strangulation, the use of a second abdominal operation may leave deep ulcers, great and complete scars has been obtained. Complications of gynecological and obstetric nature must also be noted. Pelvic tumors themselves often a direct cause of coitus, may add to the difficulties. Whenever noticeable venous scars these should always be suspected and the 'sex' itself observed. In them, the venous is much more reflex and effusive in character than that of arteriosclerosis alone. Local treatment will often give considerable relief. The operation of proctostomy sometimes raised when a venous is in prospect. In my opinion there is a slight risk of overexposure up to the end of the third month. From the fourth to the eighth there is little or nothing to be feared other than the patient's attitude or that of friends. The old-fashioned idea that a pregnant woman is like a piece of egg shell does not to be treated as such seems to be very bad. After the eighth month, or so far as premature delivery is concerned my experience, that examination of the infant has been more strongly suggestive of obstetrical manipulation than true premature birth. Cases of the latest form of cancer, have met with no exception.

As far as preventing complications those of nature and debility consequent to persistent coitus should be known in mind and guarded against as well as discussed under therapeutic details. The next point is for the patient to have something made her "to be not with" and so prevent seeking. The popular idea of abstinence from food is strongly to be deprecated, liberation of having food against the patient's inclination.

The question of possible company has been considered from various standpoints, with the following deductions. Usually, people of Nordic origin would seem to be better suited than Latins or Greeks. With a few exceptions, practically all the early explorers who opened up virginity were Nordic. Lief Ericson, Hallput, Van Dermen, Cook, Duquesne, Remond of Swiss origin have been found on the Upper Nile in Egypt, while the Dutch opened up the East Indies. Norwegian, Colombian, Cuban, Dutch, Magellan, Vesputus and Vasco de Gama in the past, the Latins of to day are certainly not good sailors while the Slavs being fairly

stated a point from common observation, that, is, considered as far as individuals the white surface on the lower. They are the first to succumb and the last to recover, consequently right of hand is the only thing that saves a fish from drowning when it is in temporary or sustained injury sufficient to give out on a weak fish will create more disturbance than it does towards other individuals. In this respect he is followed by the fish. They both seem to fly right down to it. Among Ornaments, contact with Randa, Miley and other ornate and passengers would suggest great underlying questions. However, with African inquiries, but personal experience has not been sufficiently extensive for any definite statement on this point.

With regard to color as apart from size, the blanda is undoubtedly a better color than the bransia, while the yellow is intermediate with brown tendency. In connection with this is the fact that in almost every blanda ship or group, the like-eyed blanda type predominates markedly over the dark or brown-eyed bransia. On one occasion it worked out as much as three to one. The blanda appears to be a natural follower of the fish. Angles have been found there also, which is in keeping with the main facts derived from a visual aspect.

Concerning "strains that swim" as individuals, increasing age would appear to make necessary, although on the absence of close observation of different persons in capable proportion under the same weather conditions, which is practically impossible. One must be accepted here as a clinical proposition thus definitely proved fact. Among professional sailors individuals are found in whom length of service about certain an anomaly. It is a record that Lord Nelson was struck at first every time he went off. I was diagnosed with an effect of thirty years service at sea who regularly kept his water on the bridge with a higher board line, and used it for the first two days of the voyage quite regardless of weather conditions. Strangely enough as was naturally to be expected, riding as before as custom did not, effect less any more than the many hundreds tried in even by me again. After the first two days he reported his "swings, and required very bad weather to spend him again.

With regard to treatment here is absolute prevention is better than cure, and this is in other elements of disease or perhaps even the number of swimmers is large, what helps is one case late is another. Prophylaxis may be divided into the pre- and post-infection variety. The former consists in a thorough regulation of the elementary tract involving the digestive function by usual means for two or three days prior to sailing, combined with large doses of bromide, three daily, and hoping for the best. This is not infrequently obtained especially if bromide is continued for the first one or three days at sea. With regard to post-infectious prophylaxis, the problem is a little more difficult unless the potential poison applied voluntarily for treatment. In usual practice this is more the exception than the rule.



For such journeys (1) being out of the ship; (2) the poor diet, like having access to a canteen would improve matters. Though ill-effects, shortening the fast and so forth, are doubtless to be feared, I hope, however, avoided, and that their being, after a comparatively rapid recovery, of the ship, out of sight, when suffering is done, requires, perhaps, less, because I hoped already upon the class in which the patient is treated. Third, these passengers are the first to 'lose temper', about stages, outside their own than the others. It may be urged—and quite correctly, too—that the reason for this lies in the difference of accommodation between the classes. Third-class passengers are usually lodged in one or two ends of the ship, where they experience maximum motion, and certainly maximum heat. This is hardly admitted, but at the same time however, in ships, crowded from first to cabin class identical rooms where when crowded by first-class passengers were often reserved to those of varying key when occupied by other class passengers! In this respect, therefore, it would seem to be largely a matter of relative degree. However, when treatment is voluntarily asked for, time as a rule does not permit extensive preliminary procedure and direct methods must be employed. Of these, hypodermic injection is probably the most satisfactory.

As regards curative treatment, it has been said that 90 per cent. of sailors recover naturally, while the odd one is lost, left to the tender mercies of the ship's doctor. This may be perfectly correct, yet in view of the possibility of alarming complications it is obvious that something should be done to mitigate if not completely relieve the suffering of the patient. These measures are medical in position, diet and drugs. The prominent position probably on deck in the fresh air, in the heat. The head should be kept low. A night ladder against the sideboard is often beneficial in returning that waking, looking. The patient must be kept warm at all times, whether on deck or below.

On the subject of diet opinion is divided. Some ship surgeons advocate starvation, while others, simpler ones in fact, favour feeding. Personally, as long as the patient has something to be kept with, than vomiting, retaining, I defer to his individual inclination, allowing whatever may be desired, no matter how heavy it may seem. Saline purgatives. Some things—pudric etc. having found by experience that no article which is forced will more likely be retained than the identical or palatable or palatable food. When nothing is desired and that is the usual mode, then I either have fresh perfectly water containing a go to the cause of both heartburns, with the hope aimed of giving the patient something to be sick with, pushing against distention and relieving nausea. Other foods—champagne, brandy, stout, ginger ale all have their adherents, although I am averse to putting 'ferry drinks' into even empty stomachs and possibly causing gastric distension. At the same time it must be admitted that in some cases the explosive and carbonic water is useful the patient. Notwithstanding its much excelled water is sometimes, I have

never let the patient be treated where dry gases are used. That should be given out and that the gas having been estimated by burning. If forced by the patient, started in the form of heavily whisky or gin, can be added to the ginger ale, which should be at the dry variety.

With regard to drugs, as yet no specific has been evolved. In view of our uncertainty of etiology, I do not think there ever will be. Before administering anything at all, however, the pulse should always be felt, and its rate and more especially its action carefully noted. This done, any such use or combination of depressant drugs, may be given with the promise that it will be a lot or more, proportionate somewhat then to what feeling and the right nature has been found for each individual. There include bromides, chloral, chloroform either singly or in combination. Five to 10 gr. of barbiturate of soda should be incorporated with such dose against sodium. I usually give doses hourly for six days before changing the mixture. These are being passed by prolonged trial of a known factor, and the next combination may where the patient is used.

Lately though purely empirically, I use one of the following methods. First administration of sodium nitrate 5 gr. four hourly, or by teaspoon, I use it under the tongue every four hours. This is indicated whenever hypotension exists. If it fails to relieve the vomiting it certainly reduces the risk of hemorrhage from overstraining in cases liable to it. Sodium nitrate tablets should be dispensed in midnight measures owing to their deliquescent properties, while by teaspoon should be applied under the tongue by a dropper with a stiff nipple. This is best made by using one end of a 3 in. length of hard black rubber tubing and applying the other to the glass dropper. The nipple is merely slipped on the end, and accidental overloading may easily occur through vibration or motion of the stop. Treatment for the next is strychnine hypodermically and sometimes in the rectum. Each dose should be followed by a draught of water to efface the burning sensation of the solution.

Should hypotension occur or be suspected, then the method is obviously contraindicated. The patient is already sufficiently depressed without adding to it. Therefore, hypotensive exposure of strychnine sulph. 1/10 gr. strychnine sulph. 1/10 gr. or less, 4 times, every six hours for three days should be tried. A great advantage of this method is that the drug cannot be vomited and there is opportunity to act liberally if such is the result. A Wyllie's Naval Service hypodermic syringe is most useful for a large number of patients. Good results have been obtained with the following combination based upon the "arterial gas" principle, and also when given prophylactically —

1. Strychnine sulph.	gr. 1/10
2. Strychnine sulph.	gr. 1/10
3. Strychnine sulph.	gr. 1/10
4. Strychnine sulph.	gr. 1/10
5. Strychnine sulph.	gr. 1/10
6. Strychnine sulph.	gr. 1/10
7. Strychnine sulph.	gr. 1/10
8. Strychnine sulph.	gr. 1/10
9. Strychnine sulph.	gr. 1/10
10. Strychnine sulph.	gr. 1/10

I returned to the *Washington Post*, the only publisher I can think of, whose editor attached to reports a slope, even if unimproved and decline to submit. A constant influence would help him contend with the single stephens and stephens solutions. Important shows eventually followed by a value including slope and the patient on a rising and probably across the doctor of bad faith of the question, hoping not mind past to it.

A table of comparison need is in three cases, of a further case could take as studies in given below as a matter of interest. With the number is admittedly too small for acceptance as scientific. I do not consider a greater number on each case would show considerable difference beyond that to be mentioned.

	Slope and Stephens	Single Tentative	% of Slope
Positive	55	50	91
Positive (Stephens [some asked])	5	50	5
Negative	7	24	43
No Report	78	50	64
	135	124	93

A warning factor should be noted in this table. The slope—stephens—No Report, are unsatisfactory. They may represent some positive, but also look on further interest data relevant in negative, and disappointed by failure of one method who would not say more, and possibly also a number of each. In Minnesota Marine positive positive, since it is first of to report or have other given intended upon the page(s). It also of records, whereas the same research conducted under stephens—positive would at once eliminate the unknown quantity factor. A clear check could be kept.

Many transports during the stepping season should supply a good record held for records on the part without much trouble to the method others conducting it. Much valuable practical information would be gained thereby. Results in 31 M steps would be better, I believe only.

As to the patient populations offered to the traveling public, all those not proved much benefit an analysis are composed of known therapeutic agents in varying combination and dosage. Each records on some case and fails to allow maintaining its popularity on the strength of its continuous combined with a full publicity campaign. To mention a few: 'Mathematical stephens—stephens—stephens'—some available points on such stephens. 'Anatomical geometry' probably contains stephens stephens and stephens, etc. Every decade seems to produce new methods, most of which have but an ephemeral existence. A combination of valuations and and then mentioned layers as 'valued' has given many good results, the scientific reason for which I am at a loss to explain.

In addition to proprietary preparations there are various remedies, some cheap such as using such as wearing a bottle of mercury round the neck, others again are nothing but nostrums such as electric pads "wound places," etc. Hence credulity appears to have no limits.

A few years ago a method of treatment was much advertised by a German shipping company. It consisted in periodic inhalations of oxygen passed through some chemical preparation, the nature of which would not be divulged by the carrier. Statistics of success, couched in very vague and scientific language, were published, events, inquiry has shown the fact that the complicated apparatus necessary for its use has been discredited.

At the present moment I am experimenting with inhalations of oxygen combined with carbon dioxide in the proportions of 80 and 20 per cent respectively. This mixture was suggested by the author, who has three operations on the success obtained by its use as post-anesthetic for vomiting. So far results have not been brilliant. Furthermore, I am not very hopeful considering post-anesthetic vomiting to be common in character, whereas in anesthesia it is probably more mechanical and reflex. As all events on the earlier stages. Temporary relief has been obtained but so far no definite cure. Moreover the process is quite completely different, does not warrant the use of oxygen in the treatment of other cases and methods. It is cheap and would probably prove too expensive for general employment. Finally, many patients get frightened when the mask is first used.

Immediately after the war an apparent panacea was discovered in the so-called "American Therapeus." This consisted in plugging the nose tightly with cotton wool so that "our protection" ceased to suffer from. On investigation, however, it was found that "our defense" in which (I suppose) nostrils were a prerequisite for success, the method being ineffective for those with normal breathing. For some years afterwards "our nasal air plugs" were on the market until their general inefficiency led to disappearance from the long list of nostrums. In this connection, a thing or two can mention I met a dead mare patient plugging both ears with wool. On being questioned as to her reason for this he replied that he felt better when his ears were tightly plugged. This was interesting already, but unfortunately I was unable to ascertain the nature of the dead nostrils beyond the fact that it was respectful and hortatory to some members of his family.

In many cases there are physical, hereditary and when it can be reduced, a great deal of treatment is waste or so complicated which must be followed. It takes the mind of the subject who is ignorant of medicine in its progress. In passenger ships this is not always possible. There is no room for people having nothing to do and all due to do it in, although much can be done by useful provisions to prevent them taking root in their bottles until port is reached. One session in a port, when according to law

much longer. I could retain my last meal, a hot, spicy vegetable and ducked a few minutes against a new pain. He sustained a very severe swelling on a dirty, irregular flap hanging over the right eye. The flap was so heavy that it took me twenty minutes to insert three sutures and dress the cut. At the end I was very tired, with perspiration dript all about being a walk and ate a hearty dinner in the evening.

### THE SYMPTOMATOLOGY DIFFERENTIAL DIAGNOSIS AND TREATMENT OF KALA AZAR

By GEORGE LESTER AND EDWARD ASHALL, D.M.S.C.

and

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In this article it is our intention to summarize briefly the symptomatology and the laboratory methods of diagnosis, discuss the commoner diseases which imitate it, and summarize the modern methods of treatment.

#### SYMPTOMATOLOGY

The onset is usually insidious, the patient complaining of a persistent fever which does not respond to any drug treatment. The pyrexia is generally remittent in type or continuous, intermittent, and rarely runs above 100° F. A characteristic feature is the double remission in the twenty-four hours which can be seen on a four hourly chart. The first point may be diagnostic. Swells accompany the fall in temperature, and are profuse and short-lived. An increase in the size of the liver and spleen happens simultaneously. After five to six weeks an improvement takes place, during which time the fever, swells and the liver and spleen tend to return to normal size. The remission may last from two to four weeks, after which the symptoms return accompanied by loss of weight, anorexia, and occasional attacks of diarrhoea, to be followed by a second remission about two months later. Eventually a low, continued fever returns, accompanied by acute anorexia and anorexia, and the fever may be prolonged since it is it is below the normal margin, with the spleen shows marked enlargement with the lower gate palpable below the umbilicus. In the late stages of the disease, oedema of the extremities, anorexia and a profuse 'early-grey' perspiration of the arms, legs and abdomen are common features. A fatal termination is sometimes seen, even in from one to two years from the time of onset. The patient may be carried off by intercurrent infections, such as pneumonia or dysentery which, owing to general debility, he is liable to acquire.

There are three points which we wish to emphasize as being of diagnostic importance. They are —

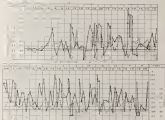
and vomiting or "collapse." There is no appetite and there is no sleep.

- (3) The patient remains in a comatose state in the twenty-four hours.
- (4) The patient dies in ten days of the fever and spleen corresponding only (approximately) to pyrexia and pyemia.

#### LABORATORY METHODS OF DIAGNOSIS

(1) *Widal* agglutination shows a reduction of R.B.Cs. in between 4 and 6 months of illness. If early, they may be as low as 24 millions in severe cases. Sometimes, polychromasia and nucleated red cells are easily seen. Leucocytes count is approximately twenty per cent. secondary neutrophils. A temperature of one usually persists and is a diagnostic point. The white count is usually 10,000 per c. mm. and there is a relative neutrophilia. The hemoglobin is 6 to 12 per cent.

(2) It is usually possible to find Leishman-Donovan bodies in the peripheral circulation.



The importance of a thorough blood examination lies not only in the estimation of the protein cells, and there, but in ruling out the possibility of the presence of Leishmania. As

it is so long for possible Leishman-Donovan bodies in a blood film the method used by Kishida and Das Gupta should be used.

A syringe filled is filled by drawing up 2 cc. of the serum under a fine stream. The serum is then poured into a test tube and 1 cc. of a 2 per cent. formaldehyde solution (part 1) is poured on top of it. After allowing this mixture to set for ten minutes the contents of the test tube is then centrifuged in a centrifuge and then stained by Roman's method.

An alternative method is to stain the deposit of white cells obtained in centrifuging stained blood.

### (2) Roman's Atypical Test

1 cc. of blood are withdrawn and the serum allowed to separate. 1 cc. of serum is then transferred to a small test tube and one drop of 10 per cent. formaldehyde is added. The test tube is shaken and allowed to stand at room temperature. A positive result is indicated by agglutination of the serum and a milky turbidity which occurs in from five to ten minutes. Sedimentation without turbidity may occur in agglutination, agglutination and sedimentation. This test is not always reliable and we have had two cases where Leishman Donovan bodies were found in splenic puncture in which the test proved negative. It is of use where a large number of negative tests to be investigated.

### (3) Splenic Puncture

This is the most reliable method of demonstrating the presence of Leishman Donovan bodies. It is a simple method requiring care and certain precautions.

(a) The delicate structures of splenic or lymphatic nodules in which the capsule of the spleen is easily torn must be made before splenic puncture is attempted. The blood examination should serve to define these conditions.

(b) Reduction of the coagulable time of the blood should be carried out by the administration of sodium bicarbonate 30 gr. on the day previous to and on the morning of the operation. As an alternative substance in place of sodium bicarbonate may be employed.

(c) The skin over the spleen must be carefully cleaned and a light incision employed to tear the capsule of the capsule open and then withdraw the spleen. As a further precaution against tearing the spleen the needle should be connected to the syringe by a short length of sterile rubber tubing. The syringe should be of 10 cc. capacity so that ample suction the needle should be drawn for 10 mm. and the syringe and needle must be perfectly dry.

(d) The site of incision for puncture is at the most prominent part of the enlarged spleen. As an additional safeguard in case of hemorrhage the puncture may be made between the ribs to allow the spleen to be compressed against the diaphragm and chest wall in case of such an untoward occurrence.

Injection of ether and formalin with 2 per cent. cocaine is quite sufficient to prevent the patient experiencing discomfort.

During the operation the patient should be told his breaths to maintain the needle in one position.

The aim is to obtain spleen pulp without their blood, and only a small quantity is required. Though it contained in the needle for most purposes and the syringe should only be used as a means of getting suction, and on a tight glass to ascertain whether the needle is drawing up any spleen pulp.

(3) The pulp cells are now expelled on to a slide for drying and direct treatment of a film by Leishman's stain and a second smears expelled on to M N N slides for culture. If spleen pulp has been obtained it will appear on inspection as small splenocyte masses. Leishman Donovan bodies when present will be found in the large monophagocytic cells or occasionally they may be extracellular.

#### (4) Liver puncture

There is no alternative means to spleen puncture, and after, as much as the liver is a less valuable organ.

The Leishman Donovan bodies are usually to be found in the hepatic cells of the tissue. Owing to the more solid consistency of the liver, fewer cells will be reported than from the spleen.

### DIFFERENTIAL DIAGNOSIS

It is impracticable in this article to consider the differential diagnosis of kala-azar from all the diseases exhibiting splenomegaly. The principal diseases to be considered in arriving at a diagnosis are as follows:—

#### (1) *Protozoal Infections*

(a) *Malaria*.—The regular periodicity of the sharply defined paroxysms, together with the agues and generally severe symptoms of acute attacks of benign tertian or quartan malaria, serve as differential points. Blood examination should clear the diagnosis.

It is an chronic malaria—especially the extreme of malarial toxæmia—that confusion may arise. No parasite may be found in the blood and the pyrexia may be unattended by well marked chills. An malarial toxæmic malaria and a late-stage pyrexia with double mass on the twenty-four hours, waves, meeting enhancement of the liver and spleen and even icterus, may be present. The following points should be particularly looked for:—

In malaria, the patient both looks and feels ill; has a dirty tongue, no appetite, and very rednesses will be intense.

In late-stage, the patient is not conscious of feeling ill; his tongue is clean, appetite unaffected, and rednesses of skin well if present in a patchy paroxysmal of greyish colour.

Finally the blood gives an as marked contrast.

In severe malarial toxæmia, the red blood cells may be as low as 1,000-400 per c.mm., polychromocytes, anisocytes and nucleated red cells



may be an evidence. The total white blood cell count will not be below 3,000 to 4,000 per c. mm., and polymorph leucocytes may be seen.

(3) *Trypanosomiasis*.—Infectious fever, anorexia and vomiting are common to both trypanosomiasis and kala-azar. In trypanosomiasis, however, the characteristic symptoms, starting sometime before and during the hypnozoönemia are characteristic, in the early stages, and later the mental changes and parapsychia of the later stages serve as points of differentiation.

If blood examination and gland puncture have yielded negative results, opinion in kala-azar patients may have to be deferred.

(4) *Enter Afebris*.—Here, fever, anorexia, vomiting and anorexia may cause some doubt as to diagnosis. Attention should be paid to the history, condition of the spleen, character of the temperature chart and leukocyte signs. Examination of the stools is essential. Lastly, explanatory reasoning should solve the question.

### (3) *Bacterial Infection*

(a) *Typhoid Fever*.—The rapid progression, typical tongue pulse temperature rates, duration of the pulse, and after the eighth or ninth day the characteristic rash should settle any confusion. The Widal and agglutination tests should help to differentiate between the two diseases.

(b) *Dysentery Fever*.—As in typhoid, the various leukocyte, chemotic, pulse or pulse, forced tongue and other symptoms present variable blood culture and agglutination tests are confirmatory.

### (4) *Relapsing Infection*

The only infectious infection likely to resemble kala-azar is Egyptian splenomegaly. In this disease recurrent fever, enlarged liver and spleen and anorexia occur. Later anorexia and vomiting are present. A marked leucocytosis with eosinophilia, in the early stages, and later a leucopenia, may give good clues for doubt.

The skin reaction (Pawley's test) will settle the question, and need examination should help if female splenomegaly are present in the veins and eggs of the parasite are present in the blood.

### (5) *Blood Diseases*

(a) *Protoplasmic Anemia*.—Working in material, the spleen and hepatic enlargement is not marked and the blood is deficient in showing gross collection of red blood cells, the presence of all varieties of degenerate and cells, anisocytes, polychromatocytes and the high white count above unity.

(b) *Leukemia*.—Here, again, both varieties of leukemia have typical blood pictures which should be satisfactory.

(c) *Splenic Anemia (Banti)*.—The liver and working of kala-azar are absent. Hemorrhages are prominent in this form of anemia and absent in kala-azar. A leucopenia is present in both diseases, but in Banti's disease a normal red cell count. This disease presents most difficulty in differentiation from kala-azar, and spleen puncture is the deciding factor.

feeding. If the mother is unable to nurse, 2 oz. of milk (sterile) in 1 pint of water, sweetened to the mother's taste, may be given with perfectly satisfactory results.

#### Treatment

(1) *Glucose*.—A feeding solution, usually a 2 per cent glucose solution or glucose water, containing the sugar specific for this disease, the glucose being in a readily fermentable form, consisting with 2 gr. of the salt in 1 oz. of glucose water, and increasing by 1 gr. each time until a concentration of 10 gr. is reached. After 1 gr. contains 100 cc. of 2 per cent concentrated solution of glucose solution.

A feeding concentration of 10 to 15 gr. may be necessary, but a rough estimation of the requirements can be estimated by adopting the following rule:—

If the infant persists for more than two weeks after treatment has been instituted, a course of operations lasting two months should be given. If the patient persists for three weeks after commencing treatment, a more extensive course should be given.

Each regimen should be kindly prepared and repeated very slowly, the giving being of continuation of the throat, and perhaps opening, without, of course. The operations should be given on 2 per cent glucose water over the end. Most patients complain of a metallic taste in the mouth during or immediately after operation.

Drugs must not be pushed beyond a patient's tolerance, and indications, although, still in determining the individual dose in the regimen until tolerance is established. It usually causes no trouble by the time 1 gr. disappears from the mouth.

(2) *Drugs used in treating Compounds*.—These have practically replaced ordinary means, as the treatment of infection. Their action is quicker and they are less toxic. Furthermore they have the advantage of being suitable for administration in children and are marketed in sealed ampoules ready for dissolving in sterile water.

These drugs are sold under various trade names, such as *Stilona*, *valbena*, *Schleusen*, *Stavos*, *Stilona* or *Stil*, *Stilona*, and *Stil* (Stilona).

The usual dose is 0.1 gr. and is increased by increments of 0.05 gr. up to 0.1 gr. These compounds can be given more or three weekly, a total course of from 3 to 6 gr. being required.

In children, intramuscular injections of 0.05 gr. up to 0.10 gr. (ampoules of valbena or stilbena) are recommended.

The prognosis in cases of laryngeal infection is good if they are treated early and steadily. A continuous course is a necessity for certain laryngeal infections. The prognosis concerning laryngeal infection. Failure of progress under treatment is shown by cessation of breathing of the trachea, should be continued by change of drug to one of the other compounds mentioned.

# CLARENCE THORNTON, M.D.

DE SECOND LIEUTENANT U. S. ARMY, 1890-1900, B. S. C.

## INTRODUCTION.

From reception to education at the Military Academy, not as of study at medical schools today, no acquisition of clinical material is available for the student which he is apt to regard as being serious and representative of every clinical and pathological condition in medicine and surgery with which during his subsequent career he is ever likely to become personally acquainted.

The limitations of his knowledge are probably brought home to him forcibly and dramatically, if he has returned to practice in foreign fields, where scope is unlimited, cases plentiful and complications inexhaustible. Few graduates report years spent in "walking the wards" at a large teaching general hospital. If this is accepted as a truism it will be admitted that such appointments are limited in number and that facilities for acquiring post-graduate experience are available in supply demands. These much-sought after hospital appointments are certainly desirable for those who expect to contribute to specialist practice, as they give the way for clinical experience and intercourse with a positive list of students to number days of the hospital staff of a teaching hospital. The time of waiting for these posts is long and tedious and the graduate has no guarantee that success in years to come will be at all commensurate with early hopes, as with the money he has expended. He may realize that other points exist, whereby he may successfully expect to enter upon a career of usefulness and enjoyment where assistance may be secured and scope found for suitably directed energies.

It is surprising that the Imperial German army had a sufficient of candidates from which their demands may be satisfied and over-satisfied. They offer satisfactory means, with other advantages, and everywhere require an all round high standard of work, which especially on foreign stations, is unopposed and unopposed with glances and chances for study of tropical and rare diseases belonging to studies of medicine with which the average graduate is unacquainted.

Short service commissions should appeal to some young graduates who also are anxious for the holding of the Imperial Commission in the medical branches of the Army. For such a much practical preparation is required for any post-permanently, as that in repaying him to content himself temporarily, or for a much longer period than he will ever desirably.

For those highly qualified medical practitioners who are not inclined to serve the German directly or who are inhibited for such service, other fields are available such as present supply, ways for checking children upon



an who were responsible for good and bad fortune, and for controlling good health and disease. The introduction of spirits to give the benevolent spirits and to exorcise demons and evil spirits is ascribed to the date of the founding of Taoism by the philosopher Liu-tao constant about 600 A.D.

To study every kind of illness, the Chinese have allocated some special therapeutic charms and prayers, by genre, are supposed to have the power of transcribing the patient's illness to a paper upon which is drawn a picture representing an individual or a diagram appropriate to the circumstances of the case. This is by visualization so that it is assumed that the malady can be transferred by the adherence of written on the paper, and since this is developed by learning Chinese tradition holds that the address reaches also.<sup>1</sup>

Thus a charm for healing sore eyes contains a written character in the Dragon, a deity especially associated with water and rain. Water being, obviously suitable for washing the burning of inflammation, inflammation, sore eyes. The paper with this appeal to the Dragon is burnt, and the ashes, mixed with a liquor are administered to the sufferer as medicine.

There are thus charms for exorcising malevolent spirits for removing coughs and colds, for stopping vomiting, fever and diarrhoea, for death, typhoid fever, for ensuring satisfactory pregnancy and child birth, and for curing tuberculosis and malignant disease, etc. etc.

In the spring of 1966 a Chinese boy was drowned in the river at Shanghai, and his relatives upon being urged to search for his body, agreed to carry out diverging operations but first, they told us that the River God, who had claimed the boy's soul, must be appeased, so only then might they dare to search from the watery depths, the body of the boy, scatched in sublimity from the world of living men. We watched a ceremony, witnessing the deceased's relatives and friends, slowly put off from the shore and toward prayer, incense and incense burners offered, while an unfortunate confederate had his throat cut and his blood dripped and sprinkled on that rippling, muddy river. When the ceremony was ended, the search commenced, and we knew that, at least the, however could not have been hastened, had we started on these antiquated and mystic Chinese river, being started.

Many, who have laboured for years in alleviating the sufferings of Colombians dwelling in the land of drugs and inflammation, say that the Chinese write excellent hospital patients. While the family of a patient may finally demonstrate gratitude for the medical skill which saved him, a should be remembered that, when there is a report of sudden collapse or death, an instantly reveals state of affairs, with even bits of records, may sometimes. The medical case may be listened openly, or dismissed as none, and it is rare to be particularly particular in describing a possible cause and duration of illness, or in offering a prognosis in a case. It is also risky to perform more extensive operations, e.g., in amputating or in exorcising malignant disease, unless the express permission of patient or





*Open Pharyngeal Abscess of Swallow*.—Chinese girl, aged 26. Stated that "during the inflammation of her throat I felt terrible and it." She could swallow only in position of extreme flexion; suggest inflammation and abscess in pharyngeal pouch.

*Peritonsillar Abscess of Swallow*.—Chinese man, aged 30. Swallow "had a severe swelling left." Inflammation, closed, definitely in pharynx with "terrible" swelling. But even in chair of surgery as we examined neck, wound, it is long, gaping widely and filled with clot. Thyroid vessels ligated and incision opened into on swabbing water more washed, removing the exophagus to be intact. Treated by removal blood-clot, insertion of iodoformy tube packed around wound inside wound with gauze and a syringe. Good recovery ensued, and wound healed slowly by granulation. Mental state doubtful.

*And a bit in Cervical Abscess*.—Girl, aged 18. Dr Tsai gave me the very rare white necrotic abscess which occurred, a complete incision exposed and out.

*Acute Abscess of Eye*.—Chinese girl, aged 17. Eyeball was proptotic. History, it being, standing pure and uncomplicated bulge of mass on other eye. With very an inflammation in anterior, right eye manifested by swelling through conjunctiva, across cornea and optic nerve. Exophthalmos condition of individual eyeball suggested infectious nature.

Before leaving Cheong-tu, H. H. H. Consul, Mr. Harding, and Dr. Ebel told me in a room of hospital arrangements on the daughter, aged five months, of one of the Consulate clerk. Lieutenant-Commander H. C. Hubert, R. N. Commanding Officer H. H. H. Consul, gave me permission to operate on this case in the last day of the day. With complete epidural anesthesia another a recommended incision defined the base of the tumor and supplying vessels were secured and ligated. A cut-gut purse along wound closed the aperture in the machine-pull resistance. Interior of swelling contained no medical tissue. Anesthesia was, therefore not a true anesthetic, but commencement with intracranial surgery was by colored incision, 4 in. in diameter, near ligature completed. 1. Closure of the surgical incision takes place about the second month after birth. Complications "Tetanus of Ankylosis" for very severe subsequently, occurred on the fifth day, closed the wound in the skin and complete recovery followed.

The Wai General Hospital, most efficiently administered by American Veterinary surgeon, combines entirely modern methods and standards.

Through the courtesy of Dr. Elye William Astor-Inspector-General, I secured further experience in the technique of spinal anesthesia, and was permitted to use it in seven cases. I was struck in three these other cases, and noted that satisfactory results followed in all cases, any tendency to pallor or a fall in blood pressure being corrected by an injection of epinephrine.

The value of spinal anesthesia in the novel or military surgeon might



be emphasized here, especially when he is faced with an emergency or when he is under unfavorable conditions: or when displaying strength of character or when simplicity of technique is essential.



Figures 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

Giuliano would record one of Williams' styles, and are the most complete of the combined styles between Williams and Williams' style, and of the combined collection of prints, including with style, style and style.

Owing to superstitions held as legitimate, many diseases are aggravated by native treatment and when the patient is at last seen by a qualified foreign doctor it is evident that he has been too late in seeking relief. In one case of malignant disease of the eyelid and nose, a Chinese woman, aged 47, at last sought a condition which was quite impossible, only a cartilaginous fragment of her ear remaining on an elevated area, i. e. at a part of the eye, the eyelid had atrophied lower, and the long curved nasal septum to a varying degree.

The photographs may help to indicate the stages at which neoplastic growth may be discovered in China.

(1) An old man with advanced epithelioma of the dorsum of left wrist.

(2) A woman with a large chondro-sarcoma involving her left nostril.

(3) A bilateral tumour in a youth. Removal of tumour was necessary to make his life bearable, and to allow of palliative treatment, but it was too radical owing to spread of the neoplasm.

(4) Malignant carcinoma of right eyeball in a boy. Transsection was effected but could not deal with metastatic spread, and prognosis was of course extremely unfavorable.

(5) Advanced epiblastoma in young adult with growth over frontal bone. Local treatment and N.A.B. produced marked improvement in this case.

#### Other Material Cases

(1) *Relapsing Fever*.—Chinese laborer, aged 35.—History of repeated discomfort, headache and fever. On admission, patient appeared very ill, symptoms suggesting cholera. Head yellow and tense. Blood leucocytes 12,000 per c. mm., with a polymorphonuclear leucocytosis and a film showed organisms similar to that of relapsing fever. Examination of faeces showed oval masses. Treatment consisted of an intravenous injection of N.A.B. On second day after admission his fever subsided. The completion of amebicidal yielded to oral course of two or three days of treatment with calomel or resublimed with water or administered after a twelve hours fast.

(2) *Amoebic Dysentery and Amebomas*.—Chinese boy, aged 13. Macroscopically stool revealed ova of amoebae and many specimens of *E. histolytica*. Stool was a dirty pink colour.

Amebomas were treated first to the double infection, because the purpura and tumours required the eliminating action tend to aggravate the general symptoms by leaving the intestinal infection, causing tumours to lodge thereon.

A course of acetone hydrotalcite, gr. 4 to 4.00 W and Co., Ltd.), given daily hypodermically for about ten days produced good results.

Recurrent coprocysticoplasmic amoebic acid, along with tumours, in several cases of amoebic dysentery, as well as a daily course of potent sodium



# HYDROCELE WITHIN OF THE TESTIS AND ITS TREATMENT AS PRACTICED AT THE PANDIT INSTITUTION IN COCHIN, SOUTHERN INDIA

By Srinivas Srinivasan, L. L. B. B. A. (Barrister)

The sight of a man in the last stages of failure is, hardly enough to impress an honest on anyone's mind. But to the Native, brought up with a religious spirit, such a sight, in suggestion of the prominence of the disease known by itself, is a source of supreme sorrow.

In India there are two centres where the disease, which was first introduced by the Portuguese, is practiced, and still comparatively recent years all patients who desired serious treatment for which had to go to one or other of these. One is situated at Kozhikode in the Pongal and the other at Cochin in Southern India. I was fortunate enough to have the opportunity of being shown the work done at the latter institution and having previously only a very distant knowledge of the disease, was able to pick up much new and interesting information. Nowadays the medical death toll due to it is not so very much less than it was at the beginning of the century, this is not so much due to improved treatment as to improved facilities for obtaining the treatment. Formerly, when treatment could only be obtained at these two places, the extreme difficulty in bringing a case from some outlying village in the jungle kept many would-be patients away and caused such delay that many who did come, arrived too late to be cured by the treatment.

Now however the disease is widely disseminated and the cure from such that the fortunate often may be obtained from any Government hospital and many of the desperate, barren treatment within these days of being taken, is now to be obtained anywhere except at the very widest parts.

Another great deterrent has been fear of the treatment, even now it is hardly lived in the minds of the majority of people that the treatment is painful and expensive. Actually treatment is almost painless, and a full course costs about 150. Formerly, the involved, apprehensive native was taken with an opening incision and with much ceremony, which added attendance made an elaborate toilet of the skin, requiring spending from the operations to his overwrought mind probably did feel painful. At any rate when he returned to his village a lot of a hero, it was always up to him to relate what agonies he had suffered to maintain his reputation as such. Hence since the popular idea that the treatment was painful, then coupled with the transport difficulties, would naturally deter many even who were not scorched at the mild conditions of the animal which in there. With disinclination, however, the first main difficulty is a moral and the old myth of painful treatment is losing some of its force.

Figure 14 of the London Institute shows that in this disease, even the number of spores given is increasing by about 10,000 per mouse representing an increase of about 750 spores per mouse.

*Hydrophobia* is endemic in the country districts and subject to local epidemics. The parts of Europe, half-starved parish dogs which hunt all native villages, domestic dogs and wild jackals and wild members of the canine tribe are the constant sources of infection to man. While at any moment may contract the disease itself there is as yet no authenticated case of a man contracting the disease from the bite of an infected animal.

The virus microscopic virus, not yet isolated is excreted in the saliva and any wound caused by an infected animal's bite, or claws, or even for a chasm or sharp dent over which it has clattered, may cause infection. The virus cannot pass through the infection skin, and penetrating or suppurating surfaces and even are said to be impermeable. Altered nerves and mucous surfaces are however, permeable; every scratch causing irritation and laceration of the tissue aggravate the chances of absorption. As in other diseases a common infection dose must be inhaled to cause infection and cases are well known in which men bitten by a dog proved to be cured have escaped, and others in which two men were bitten almost simultaneously only by the same animal and one contracted the disease and the other escaped, no treatment being given.

Having gained access to the system, the virus reaches the brain along the nerve sheath and on the account wounds of the extremities and face, where nerves and nerve endings are plentiful, are more dangerous than wounds on the trunk. Wounds on the face are very dangerous as the virus having only a short distance to travel to the brain, the incubation period tends to be shortened.

The one prevalent thing about rabies in the length of its incubation period. Some soldiers' experience is a dog produces symptoms in about fourteen days; a man from ordinary wounds the period is very rarely under twenty days. About thirty, to thirty five days is usual, but it may be three months and more. It is a measure from the highest degree of accuracy, in five or six months twenty eight days after starting the course. If the treatment before the incubation period expires, protection is secured but every day by which the viral tide short reduces the prospects of protection. An old dog or a dog not native much, but say a week might make protection problematical. If symptoms have appeared the case may almost certainly be regarded as hopeless.

From these figures one may see that there must be no delay in seeking treatment, but at the same time there is a margin left in many cases for delay in transport.

As far as diagnosis of the disease is concerned little need be said, as if symptoms develop it is safe to assume practically 100 per cent. mortality in such cases.

It must be reiterated that serum treatment is quite useless against the developed condition.

The group organism's growth is usually noticeable in the first 24 hours after it is introduced into water, on any kind of food, but not if it is treated to live fish, and this can be disproved. It is a closed group with its own food, my *Shoreland* dog is not making an experimental attack upon a man or animal should he be considered ruled out, and consequently prove to be so, later from wild packs are most dangerous and from others wild animals sufficiently dangerous to warrant treatment.

Confinement may be obtained in one of three ways: the animal is in water the animal alone and kept it tied up for ten days. If at the end of ten days it is in good health it may be assumed that the animal was not a factor in the case of attack, even if it subsequently develops symptoms and no remedy need be felt.

If the dog is captured dead and kept several days the human on whom nature has been particularly clever in the nature of the *hypodermis* under large unknown bodies of unknown composition in the cytoplasm of the nerve cells, there are known as large bodies and are dangerous.

If the animal cannot be captured alone, an outbreak of its human exposed, without it as a factor should produce symptoms on human skin to *Shoreland* alone.

As a rule, however, what happens is that a parasite dog runs in and bites and is off again in the afternoon about 4 or 5 days later. The unfortunate victim is then left with a hole of anxiety, waiting for the first symptoms to develop or how the cure is treatment, is applied as, even if it is not so easy to convince one of its adequacy when the victim is small. I have not many of the attacking animals are around alone, as the victims must usually believe in dealing with them with their own hands and making quite certain with a stick and a few bricks, then which the elimination of the *hypodermis* becomes a worry and an enormous nuisance and the very day expectancy of death, but impossible for the old days, I believe, as from coming up the treatment, who through the animal's brain with his own hand daily to see how his victim improved with an enormous scale from this, we getting on about the world's day it must, have been very hard working to see your own particular human, a lot of others.

The first sign of an outbreak is after the occurrence of pain in the throat and slight green vomiting and retching.

A painful lump in the throat, which develops into a definite purulent spot at the pharyngeal and laryngeal muscles follows, this is aggravated by attempts to swallow or drink. Later the more right of water or the smell of running water brings on a paroxysm and from then the disease becomes more. Lamentation under these conditions is very rapid, between one or, and sometimes spreads to the respiratory muscles and sometimes to skeletal muscles as well. Paroxysms may supervene, unless treated, the animal usually soon becomes exhausted and death supervenes in from two to four days. The well known feeding at the



was with I & B insulin. There are no minimum requirements for feeding the patient, but adequate attention is paid to the following: (1) The doctor is anxious to watch the condition, depicted by their eating and all (2) when a few days have elapsed the doctor's operations had begun.

Two meals for treatment. A few words about the meals may be in order.

Initially the meals differ little from that elaborated by Pasteur, but as more facts are ascertained and methods of production have been improved.

In Figure 1 the description of the form of the collected material was presented at intervals a sample quantity is used. The form is extracted and deposited in a small bottle by being shaken up in a bottle containing water. The 100 cc. of water of such an amount containing 2 per cent of I & B insulin is injected subcutaneously into a rabbit. After some days (one hour) the dog takes and when it is finished it is killed. The portion presented and the same standard quantity of the material made from the form is injected into another rabbit. The process is repeated until a form is produced which will kill a rabbit when the standard 100 cc. is injected in a definite time—usually this is about seven days.

When it is ascertained the amount of form is removed, carefully weighed and dissolved in water. This is diluted in a 5 per cent solution of form (100 cc.) with normal saline and 1 per cent of insulin and added. The resultant fluid is filtered off and the residue, both of membrane and vessels, washed with water. These are added to the resultant liquid and normal saline is added to produce a 1 per cent solution or emulsion of form tissue and 55 per cent saline. This is then sterilized in an autoclave and tested. Such a serum is called a final serum.

It is then sealed in 5 cc. ampoules and kept in a cool chamber. The serum is now prepared from cheap leucine instead of rabbits, as this gives a more economical.

If finally from its potency, it can be kept for a fortnight in the ordinary atmosphere, temperature before distribution occurs. The quantity produced is not large. Experiments are in view to producing an efficient emulsion serum are being made now. For this small dose (1-1 per cent ethanol) at least of form tissue are being used.



## Clinical Notes

## CASE OF CEREBRAL TUMOR

(1) Edward Thompson, U. S. ARMY, 1934, 1935, 1936, 1937

Male

Private, 1st Cavalry Division, U. S. ARMY

From Fort Monmouth, New Jersey

March 2, 1937, 1938, 1939, 1940

Royal Army Medical Corps

Edward Thompson was a case of a rare carcinoma which appeared in 1934, during the West Indian cruise, on leave with parental leave.

A D. aged 30 reported on January 8, 1934 (sample was sent to Army and Navy). General examination general negative and no one in 1934, 1935. He was given aspirin and a purgative and was placed on the sanatorium for three days later he stated he felt quite fit and well and was discharged with treatment. He came was seen at home until February 2, 1934, when he returned.

He was complained of headache and headache he stated he had been troubled by headache all and on some repeating early in January, but that in the headache were becoming more marked and he felt sleep and night time.

Private Thompson returned had had a further episode of headache in 1934, previously and had been in hospital three days with treatment. He stated also a history of epilepsy in 1932. Patient had been under treatment continuously since that date and had been very conscientious in taking it with the exception of the W. Thompson was still positive in December 1934.

Family History—None relevant.

Present Condition, February 2, 1937—The headache was localized and accompanied a decrease of appetite—no definite vertigo—and also some disturbance in speech, which the headache was worse.

Examination revealed nothing abnormal. Reflexes normal. Pupils equal, round and equal in diameter. No bristling on forehead.

On further examination of skull could be found. Ray nose and throat showed nothing abnormal. Heart and lungs, no abnormal lung. Venous system, no appreciable disease. Urine showed no abnormality.

As headache more intense and persistent, he was placed on the sick list for observation.

On subsequent days his complaint was headache and dizziness and it was noted that it was better and tired. There appeared to be increasing headache, and his sleep was disturbed. His hands trembled in doing it was occupied and he seemed to feel the head more than might be expected.

The patient remained quiet. Appetite was lost. Urine and blood normal and negative.

February 2—The headache had become markedly increased and was of a severe type. Examination made no appreciable.

He was placed on potassium iodide 50 gr. daily, and put to bed. The condition from disease on leave gradually receded and patient began slowly to

He was placed in bed at the Military Hospital, January, on arrival February 22.



Military Hospital, Birmingham, who supplied the following description:—The opening into the shell was two inches externally apparent diameter, the external circumference of the rim of the lower end measured 4½ inches; but some spaces, there was a tumour 1½ inch in the lower end, thus against the wall and completely filling the cavity.

The tumour was 1½ inch in diameter, fully covered by peritoneum and measuring 1 in by 1½ in by 1 in.

"The innermost parts were the darkest on the right side and was dark, consequently, the right lateral contents was discoloured with a like coloured substance, very light yellow in appearance throughout the whole of its power of life. The left lateral contents was normal. The cerebral vessels and lower contents were normal throughout except for the area referred to which was the appearance of inflammation suggested. The posterior portion of the tumour passed close to the posterior meninges and the corpus quadrigemum, and below to the cerebral pedicle. The tumour appeared to be an undulating subarachnoid.

Tumour and contents were not removed."

*Autopsy Report*.—"The tumour was nodular and on section was covered with the surface of each portion of each section was normal.

*Microscopically*.—"The remainder when opened shows a dense capsule lined with brain and outside with a thin-walled layer of endothelial cells. Inside the capsule are: (1) thick spaces; (2) a few layers of dense tissue very closely packed; (3) layers, which are composed of cells of the squamous cells arranged in many patterns. The cells are polygonal in shape and smooth, with their nuclei the smaller nuclei being 10 to 200 cells.

"The stained section of the process of being the tissue was tested and gave a heavy but definite positive for the cholesterin test. In my opinion, the tumour is a cholesteroma.

The above cases are not isolated, as it is questioned that although cholesteroma is common occurrence in nasal conditions, the cerebral variety is of relatively rarity to various publications.

It thus sets the typical history of the present, externally added to the difficulty of diagnosis.

From the anatomical points and dissection, appearance of legs and other organs of matter and sensory condition, equal to the first table presents in the lists of the brain and contents was considered as normal.

The only sign of increased cerebral pressure was seen, was, the vomitus after meals, we were unable to get a proper view of the brain. No vomitus was reported except when he reported early in January. The cerebral mass of death was the matter human legs which occurred apparently, two or three hours before his death.

The fact that the hemorrhage was regarded as considered worthy of note. It would seem that it occurred near a mass of per. matter and then the effects were produced by pressure as distinct from a plunging up of brain substance which it is the usual case.

#### PULMONARY ARTERY CAINER BY ANGIOTIC ANGIOPLASTIC

By HENRY CHAMBERLAIN, M.D., F.R.C.S., F.R.C.P.

A B. aged 35 was admitted to the Sir Wm. Dunn Hospital on August 1899, on a case of obstructive pulmonary arteriosclerosis was diagnosed in England, and arrived at St. Thomas' Hospital on November 1899.



TABLE 1. The  $\chi^2$  test of the hypothesis that the observed frequencies are independent of the sex of the subjects. The expected frequencies are shown in parentheses.

Item	Quantity	Unit Price	Total Price
1. 1000000 per 1000000	1000000	1000000	1000000000000
2. 1000000 per 1000000	1000000	1000000	1000000000000
3. 1000000 per 1000000	1000000	1000000	1000000000000
4. 1000000 per 1000000	1000000	1000000	1000000000000
5. 1000000 per 1000000	1000000	1000000	1000000000000
6. 1000000 per 1000000	1000000	1000000	1000000000000
7. 1000000 per 1000000	1000000	1000000	1000000000000
8. 1000000 per 1000000	1000000	1000000	1000000000000
9. 1000000 per 1000000	1000000	1000000	1000000000000
10. 1000000 per 1000000	1000000	1000000	1000000000000

*Hydrophilus* 84    *Grana opila* 10-500 per core, red soil    *Leptocryptus* 1000  
*Hydrophilus* 25 per core, normal soils    2.00    *Orthocentrus* 1000    1.00    *Hydrophilus*  
 70 per core    *Hydrophilus*, 10-100 per core    large numbers    10-20 per core    *Hydrophilus*  
*Hydrophilus* 10-50 per core    *Hydrophilus* 10-50 per core

During the first 24 h post-infection, which were sent to the laboratory for examination for the presence of any microbial invasion, there was

History 4 1991 - Laboratory Report: Minerals, parts of Eastern's  
Institution records.

It was reprecipitated, subsequently 1 g. sodium hydroxide and the same amount of water for the same.

**January 7**—The last batch of phylaria developed on top fish larvae collected recently at Lake Umbagog, Maine, were examined.

After an interval of ten days from the last epidemic exposure he was given a continued supply of cod-liver-oil tablets 1 gr. by the mouth and rectal injections of 30 cc. of 1% per cent solution of yodium daily for ten days, as recommended by Schötenberg and others (1).

Downloaded from <http://ajphaphapublications.org/> on July 10, 2015

It was only a few individuals of this species for which we were required. The only notable variations of body legs and thighs were found in the characters of the dorsal scales by the blotted spots, this was clearly improved, when he is introduced to East Lake on June 12, 1950.

Dysentery—a case of the Colitis problem again as reported which was found to have a causative *A. baumannii*. The history of dysentery as discussed in the text, was obtained from the patient.

The analysis of patients have showed some evidence that alcohol use is associated with depression.

1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26

[10] "Wages Index: 1913-1997." The Department of Economic Operations, U.S. Bureau of Economic Analysis. <http://www.bea.com>. Accessed 10/1/00.

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1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 26

The following poem may have appeared as a digression, one of the variations we can now easily dismiss the notion of the epilogue.

Supper and it was admitted to R.N. Hospital Chelsea January 21 1941  
on the 22 epidemic started at that time an epidemic spread to other  
rooms in the ward.

The authors thank the patient companies of hospitals and clinics participating in the study for their kind support, to Dr. H. C. T. and J. M. for their friendly and helpful assistance, and to Mrs. J. M. for her valuable assistance in the laboratory.

As changes in the conditions improved until February 1, when a list of the sick was made and gas collected. It is during this temperature, say, 1-10° F., that a maximum in the number of the virus.

The following table shows the results of the 1994 U.S. Census Bureau's Survey of Income and Program Participation (SIPP).









Class	Order	Family	Subclassification	Order	Subclassification
Pisces	II	Pisces	Pisces	Pisces	Pisces
Pisces	III	Pisces	Pisces	Pisces	Pisces
Pisces	IV	Pisces	Pisces	Pisces	Pisces
Pisces	V	Pisces	Pisces	Pisces	Pisces
Pisces	VI	Pisces	Pisces	Pisces	Pisces
Pisces	VII	Pisces	Pisces	Pisces	Pisces
Pisces	VIII	Pisces	Pisces	Pisces	Pisces
Pisces	IX	Pisces	Pisces	Pisces	Pisces
Pisces	X	Pisces	Pisces	Pisces	Pisces
Pisces	XI	Pisces	Pisces	Pisces	Pisces
Pisces	XII	Pisces	Pisces	Pisces	Pisces

the result of the work and exhibits a change in shape to the 100th of an inch of the whole fish. The distribution of the 100th of an inch of the whole fish is the result of the work and exhibits a change in shape to the 100th of an inch of the whole fish. The distribution of the 100th of an inch of the whole fish is the result of the work and exhibits a change in shape to the 100th of an inch of the whole fish.

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and that the  $\beta$  is a choice for members of the  $\beta$  category, and  $\beta$  the region of the  $\beta$  category which has been changed by the analysis to facilitate the determination of the  $\beta$  of both the upper and lower categories. In the case of the  $\beta$  and  $\beta_{\beta}$ , the two other methods of analysis, insurance may not be available to all cases. In addition, insurance companies may not be able to provide the data needed for the analysis. The  $\beta$  and  $\beta_{\beta}$  methods are not available.

The various chapters are devoted to personal understandings, a pair of haikus and photography, a solo found advice being given and attention drawn to the admirability as well as the unfair and uneasy distribution of the events before one comes to a decision to make.

The remaining chapters deal with the various types of structures, their construction and components as met with in different parts of the structure. We note that the author greatly stresses the use of plaster of Paris and is thus no longer, as has been long since it can be used for practically every part of the body and as it is the most common use of a large class of plaster and thus the technique of plaster work has been mastered very clearly, which can be easily extended to other materials.

[illegible]

On the whole, this book is worthy of a casual perusal and much may be learnt therefrom. It is well produced, has a good colour and both the printing and paper are excellent. The illustrations are, with one problem, are reproduced from 35 mm photographs and clearly indicate what is intended, thus leaving little to be desired.

Finally, we consider that the book would not be read or played upon the assumption of those interested in this subject.

Published by the Editors: By Walter C. Spencer M.D., 1884, 400 pages.  
 Surgeon Westminster Hospital and Medical Officer, M.R.C.S. Assistant  
 Surgeon Westminster Hospital. Surgeon, Mount Vernon Hospital, Paris,  
 the Royal Hospital of Naples, a Member of the College. London. H. K.  
 Lewis and Co. Ltd. 1934. Pp. vi + 351 with 28 coloured plates and  
 125 illustrations in the text and 25 text-figures. Price 5s. net.

The first edition of the book appeared in 1950 and, after a few years, a second edition (with French and German text) was published in 1956. Then, the second edition by Baskin and Spenser appeared and more than thirty years ago we appear mentioned in the second introduction of Baskin's original work, but brought up to date by the inclusion of new information and the resulting increase in length, and also with a completely new look in structure and treatment.

Byrne said that people in charge need to bring a coherent sense of unity with regard to planning of housing in a place, to make that a chapter in the story of the city's development.

It is unfortunate that the reading of some of the literature on community organizing, as there are many signs already in place, is interpreted as to the meaning that mothers and the network is missing.

The latter part of the book is devoted to the treatment of unions by columns and it is here that the Simplified Code's noteworthy improvement will be of value. In the course of the addition, conversion and recoding operations here set out





Publications in anaesthesia. Special subjects include the treatment of burns by active and passive methods, a further study comparing these methods of relief. The value of the availability of anaesthetic methods in properly equipped hospitals. The value of anaesthesiologists in a new work on the literature and practice is preferred.

It is a very good book, designed, and excellent of general practice medicine. It is a very good book, designed, and excellent of general practice medicine. It is a very good book, designed, and excellent of general practice medicine.

**ANESTHESIA: PRACTICE AND THEORY.** By H. H. HARRISON, M.D., F.R.C.S. (London). London: H. K. Lewis and Co. 1962. Pp. 120. Price 5s. 6d. net.

This book contains a series of papers, selected from the papers, which have been published in various journals during 1960 and are now available under one cover. It is a very good book, designed, and excellent of general practice medicine. It is a very good book, designed, and excellent of general practice medicine. It is a very good book, designed, and excellent of general practice medicine.

**VAGINA: THE PRACTICE AND THEORY OF VAGINAL DISEASES.** By H. H. HARRISON, M.D., F.R.C.S. (London). London: H. K. Lewis and Co. 1961. Pp. 120.

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I cannot think of any other book of reference on the subject which has been written. It is a very good book, designed, and excellent of general practice medicine. It is a very good book, designed, and excellent of general practice medicine.

This is a well-illustrated, compact, and portable book, which, though written from the point of view of the parent, is of interest to the child himself. It is a book which should be read to the child, and which should be read by the child. It is a book which should be read to the child, and which should be read by the child. It is a book which should be read to the child, and which should be read by the child.

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# VIEW OF THE SCIENCE

## ADMIRALTY ORDERS

100—*Administrative Orders, 1888-1890*  
(1888-1890) (1888-1890)

101—*Administrative Orders, 1891-1893*  
(1891-1893) (1891-1893)

(1891-1893) (1891-1893)

102—*Administrative Orders, 1894-1896*  
(1894-1896) (1894-1896)

103—*Administrative Orders, 1897-1899*  
(1897-1899) (1897-1899)

104—*Administrative Orders, 1900-1902*  
(1900-1902) (1900-1902)

105—*Administrative Orders, 1903-1905*  
(1903-1905) (1903-1905)

(1903-1905) (1903-1905)

(1903-1905) (1903-1905)

106—*Administrative Orders, 1906-1908*  
(1906-1908) (1906-1908)

107—*Administrative Orders, 1909-1911*  
(1909-1911) (1909-1911)

108—*Administrative Orders, 1912-1914*  
(1912-1914) (1912-1914)

109—*Administrative Orders, 1915-1917*  
(1915-1917) (1915-1917)

(1915-1917) (1915-1917)

110—*Administrative Orders, 1918-1920*  
(1918-1920) (1918-1920)







[illegible][illegible]



<sup>a</sup> [10] Dependent measured by G-96 and G-97. Observed with strongy with the G. & F. (about same frequency).

[illegible]

1. The amount of  $\text{Ca}^{2+}$  released from the egg cytosol is dependent on the degree of  $\text{Ca}^{2+}$  release from the endoplasmic reticulum. The amount of  $\text{Ca}^{2+}$  released from the endoplasmic reticulum is dependent on the degree of  $\text{Ca}^{2+}$  release from the endoplasmic reticulum.

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$$T = 1000 \text{ K} \quad \ln \left( \frac{1000}{298} \right) = 1.204 \quad \ln \left( \frac{1000}{298} \right) \ln \left( \frac{1000}{298} \right) = 1.204 \quad \ln \left( \frac{1000}{298} \right) = 1.204$$

1. **Assessments:** The use of the term "assessment" is not new. It has been used in the past to describe the process of evaluating the performance of a student or a group of students. The term is used in a variety of contexts, including the evaluation of a student's progress in a course, the evaluation of a group's performance in a project, and the evaluation of a student's performance in a specific area of study. The term is also used to describe the process of evaluating the performance of a student or a group of students in a specific area of study. The term is used in a variety of contexts, including the evaluation of a student's progress in a course, the evaluation of a group's performance in a project, and the evaluation of a student's performance in a specific area of study.

**CONCLUSIONS**

<sup>1</sup>What is the difference between the two? The example is taken from the *Journal of the American Statistical Association*, 1990, 85, 1031-1032.

[illegible]

Received 10 January 2006; accepted 10 April 2006; first published online 12 June 2006

Small business is the backbone of the U.S. economy. It is the source of 75% of new jobs, 60% of innovation, and 50% of the nation's gross domestic product. Small business is the engine of economic growth and the source of the American dream.

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Figure 1 illustrates the procedure for the  $\alpha$ -test. The  $\alpha$ -test is a test of the null hypothesis  $H_0: \alpha = 0$  against the alternative hypothesis  $H_1: \alpha > 0$ . The test is based on the  $\alpha$ -statistic, which is defined as the difference between the maximum and minimum values of the  $\alpha$ -function. The  $\alpha$ -function is defined as the function that maps the input variables to the output variable. The  $\alpha$ -statistic is calculated as follows:

1. *Journal of the American Medical Association*, 1997; 277: 1001-1005.  
 2. *Journal of the American Medical Association*, 1997; 277: 1006-1010.  
 3. *Journal of the American Medical Association*, 1997; 277: 1011-1015.

1. The first step is to identify the problem. In this case, the problem is that the company is not meeting its sales targets.

...the other hand, the fact that the ...

1. The first step is to identify the variables involved in the problem. In this case, the variables are the number of hours worked (H) and the number of hours of leisure (L). The total number of hours available is 24 hours per day.

... ..

© 1999 Blackwell Science Ltd, *Journal of Internal Medicine* 245: 391–397

1. *Journal of the American Statistical Association*, 1950, 45, 1, 1-16. 1-16 pp.  
 2. *Journal of the American Statistical Association*, 1950, 45, 2, 1-16. 1-16 pp.  
 3. *Journal of the American Statistical Association*, 1950, 45, 3, 1-16. 1-16 pp.  
 4. *Journal of the American Statistical Association*, 1950, 45, 4, 1-16. 1-16 pp.  
 5. *Journal of the American Statistical Association*, 1950, 45, 5, 1-16. 1-16 pp.  
 6. *Journal of the American Statistical Association*, 1950, 45, 6, 1-16. 1-16 pp.  
 7. *Journal of the American Statistical Association*, 1950, 45, 7, 1-16. 1-16 pp.  
 8. *Journal of the American Statistical Association*, 1950, 45, 8, 1-16. 1-16 pp.  
 9. *Journal of the American Statistical Association*, 1950, 45, 9, 1-16. 1-16 pp.  
 10. *Journal of the American Statistical Association*, 1950, 45, 10, 1-16. 1-16 pp.

*Journal of Interpersonal Violence* 26(10) 1978-1997  
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1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26

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## 44407000

1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.

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*[Faint, mostly illegible text, possibly a list or minutes of a meeting.]*

PROCEEDINGS

*[Faint, mostly illegible text, possibly a list of names or a report.]*

MEMBERSHIP, RESOLUTIONS, AND OTHER BUSINESS

*[Faint, mostly illegible text.]*

QUEEN ALEXANDRA'S ROYAL NAVAL NURSING SERVICE

Report

*[Faint, mostly illegible text.]*

Appointments

*[Faint, mostly illegible text.]*

Resignations and Dismissals

*[Faint, mostly illegible text.]*

ROYAL NAVAL MEDICAL CLUB

*[Faint, mostly illegible text.]*

*[Faint, mostly illegible text.]*

























1993) and the other studies (e.g., Koppelman and Brown 1993, 1994) suggest that a well-defined spatial segmentation is important in developing a good location strategy. In the Western literature, the spatial segmentation is usually done in two ways. First, a new study is often designed to investigate a particular geographic area, such as a new market, a new product, a new type of service, or a new type of facility. Second, a new geographic area is investigated by using existing information about a particular type of facility. This type of spatial segmentation is often done in a very general way, such as by dividing a geographic area into four quadrants, into four regions, or into four zones. This type of spatial segmentation is often done in a very specific way, such as by dividing a geographic area into four quadrants, into four regions, or into four zones. This type of spatial segmentation is often done in a very specific way, such as by dividing a geographic area into four quadrants, into four regions, or into four zones.

There are three principal types of gas turbine engines used in aircraft: turbojet, turbo-propeller, and turbofan. Turbojet engines are the simplest and most efficient, but they are also the loudest and have the lowest thrust-to-weight ratio. Turbo-propeller engines are the most efficient for low-speed flight, but they are also the most complex and have the lowest thrust-to-weight ratio. Turbofan engines are the most efficient for high-speed flight, but they are also the most complex and have the lowest thrust-to-weight ratio.

1. *Journal of the American Medical Association*, 1997; 278: 1039-1044.

[illegible]





(iii) *Weighted average* – assumes that the total number of 'weighted' and 'unweighted' items is the same, and that the 'weighted' items are more important than the 'unweighted' items. This is the method used by the *Financial Times* to calculate the average of the 'top 100' companies. The weighted average is calculated as follows:

$$\text{Weighted average} = \frac{\text{Sum of (Weighted Item)} \times \text{Weight}}{\text{Sum of Weights}}$$

where the 'Weight' is the number of items in the category. For example, if there are 10 'weighted' items and 10 'unweighted' items, the weighted average would be calculated as follows:

$$\text{Weighted average} = \frac{10 \times \text{Weighted Item} + 10 \times \text{Unweighted Item}}{10 + 10}$$

(iv) *Geometric mean* – assumes that the items are related in a multiplicative way. This is the method used by the *Financial Times* to calculate the average of the 'top 100' companies. The geometric mean is calculated as follows:

$$\text{Geometric mean} = \sqrt[n]{\text{Product of all items}}$$

where  $n$  is the number of items. For example, if there are 10 items, the geometric mean would be calculated as follows:

$$\text{Geometric mean} = \sqrt[10]{\text{Product of all 10 items}}$$

(v) *Harmonic mean* – assumes that the items are related in a reciprocal way. This is the method used by the *Financial Times* to calculate the average of the 'top 100' companies. The harmonic mean is calculated as follows:

$$\text{Harmonic mean} = \frac{n}{\frac{1}{\text{Item}_1} + \frac{1}{\text{Item}_2} + \dots + \frac{1}{\text{Item}_n}}$$

where  $n$  is the number of items. For example, if there are 10 items, the harmonic mean would be calculated as follows:

$$\text{Harmonic mean} = \frac{10}{\frac{1}{\text{Item}_1} + \frac{1}{\text{Item}_2} + \dots + \frac{1}{\text{Item}_{10}}}$$

(vi) *Median* – assumes that the items are related in a linear way. This is the method used by the *Financial Times* to calculate the average of the 'top 100' companies. The median is calculated as follows:

$$\text{Median} = \frac{\text{Item}_n + \text{Item}_{n+1}}{2}$$

where  $n$  is the number of items. For example, if there are 10 items, the median would be calculated as follows:

$$\text{Median} = \frac{\text{Item}_5 + \text{Item}_6}{2}$$

(vii) *Mode* – assumes that the items are related in a linear way. This is the method used by the *Financial Times* to calculate the average of the 'top 100' companies. The mode is calculated as follows:

$$\text{Mode} = \text{Item}_n$$

where  $n$  is the number of items. For example, if there are 10 items, the mode would be calculated as follows:

$$\text{Mode} = \text{Item}_5$$

(viii) *Range* – assumes that the items are related in a linear way. This is the method used by the *Financial Times* to calculate the average of the 'top 100' companies. The range is calculated as follows:

$$\text{Range} = \text{Item}_n - \text{Item}_1$$

where  $n$  is the number of items. For example, if there are 10 items, the range would be calculated as follows:

$$\text{Range} = \text{Item}_5 - \text{Item}_1$$

(ix) *Standard deviation* – assumes that the items are related in a linear way. This is the method used by the *Financial Times* to calculate the average of the 'top 100' companies. The standard deviation is calculated as follows:

$$\text{Standard deviation} = \sqrt{\frac{\sum (\text{Item}_i - \text{Mean})^2}{n}}$$

where  $n$  is the number of items. For example, if there are 10 items, the standard deviation would be calculated as follows:

$$\text{Standard deviation} = \sqrt{\frac{\sum (\text{Item}_i - \text{Mean})^2}{10}}$$

(x) *Variance* – assumes that the items are related in a linear way. This is the method used by the *Financial Times* to calculate the average of the 'top 100' companies. The variance is calculated as follows:

$$\text{Variance} = \frac{\sum (\text{Item}_i - \text{Mean})^2}{n}$$

where  $n$  is the number of items. For example, if there are 10 items, the variance would be calculated as follows:

$$\text{Variance} = \frac{\sum (\text{Item}_i - \text{Mean})^2}{10}$$

(xi) *Coefficient of variation* – assumes that the items are related in a linear way. This is the method used by the *Financial Times* to calculate the average of the 'top 100' companies. The coefficient of variation is calculated as follows:

$$\text{Coefficient of variation} = \frac{\text{Standard deviation}}{\text{Mean}}$$

where  $n$  is the number of items. For example, if there are 10 items, the coefficient of variation would be calculated as follows:

$$\text{Coefficient of variation} = \frac{\text{Standard deviation}}{\text{Mean}}$$

(xii) *Kurtosis* – assumes that the items are related in a linear way. This is the method used by the *Financial Times* to calculate the average of the 'top 100' companies. The kurtosis is calculated as follows:

$$\text{Kurtosis} = \frac{\sum (\text{Item}_i - \text{Mean})^4}{n}$$

where  $n$  is the number of items. For example, if there are 10 items, the kurtosis would be calculated as follows:

$$\text{Kurtosis} = \frac{\sum (\text{Item}_i - \text{Mean})^4}{10}$$

(xiii) *Skewness* – assumes that the items are related in a linear way. This is the method used by the *Financial Times* to calculate the average of the 'top 100' companies. The skewness is calculated as follows:

$$\text{Skewness} = \frac{\sum (\text{Item}_i - \text{Mean})^3}{n}$$

where  $n$  is the number of items. For example, if there are 10 items, the skewness would be calculated as follows:

$$\text{Skewness} = \frac{\sum (\text{Item}_i - \text{Mean})^3}{10}$$

(xiv) *Correlation coefficient* – assumes that the items are related in a linear way. This is the method used by the *Financial Times* to calculate the average of the 'top 100' companies. The correlation coefficient is calculated as follows:

$$\text{Correlation coefficient} = \frac{\sum (\text{Item}_i - \text{Mean}_1)(\text{Item}_j - \text{Mean}_2)}{\sqrt{\sum (\text{Item}_i - \text{Mean}_1)^2 \sum (\text{Item}_j - \text{Mean}_2)^2}}$$

where  $n$  is the number of items. For example, if there are 10 items, the correlation coefficient would be calculated as follows:

$$\text{Correlation coefficient} = \frac{\sum (\text{Item}_i - \text{Mean}_1)(\text{Item}_j - \text{Mean}_2)}{\sqrt{\sum (\text{Item}_i - \text{Mean}_1)^2 \sum (\text{Item}_j - \text{Mean}_2)^2}}$$

(xv) *Regression coefficient* – assumes that the items are related in a linear way. This is the method used by the *Financial Times* to calculate the average of the 'top 100' companies. The regression coefficient is calculated as follows:

$$\text{Regression coefficient} = \frac{\sum (\text{Item}_i - \text{Mean}_1)(\text{Item}_j - \text{Mean}_2)}{\sum (\text{Item}_i - \text{Mean}_1)^2}$$

where  $n$  is the number of items. For example, if there are 10 items, the regression coefficient would be calculated as follows:

$$\text{Regression coefficient} = \frac{\sum (\text{Item}_i - \text{Mean}_1)(\text{Item}_j - \text{Mean}_2)}{\sum (\text{Item}_i - \text{Mean}_1)^2}$$

(xvi) *Intercept* – assumes that the items are related in a linear way. This is the method used by the *Financial Times* to calculate the average of the 'top 100' companies. The intercept is calculated as follows:

$$\text{Intercept} = \text{Mean}_2 - \text{Regression coefficient} \times \text{Mean}_1$$

where  $n$  is the number of items. For example, if there are 10 items, the intercept would be calculated as follows:

$$\text{Intercept} = \text{Mean}_2 - \text{Regression coefficient} \times \text{Mean}_1$$

(xvii) *Adjusted R-squared* – assumes that the items are related in a linear way. This is the method used by the *Financial Times* to calculate the average of the 'top 100' companies. The adjusted R-squared is calculated as follows:

$$\text{Adjusted R-squared} = 1 - \frac{\text{Sum of Squares Error}}{\text{Sum of Squares Total}}$$

where  $n$  is the number of items. For example, if there are 10 items, the adjusted R-squared would be calculated as follows:

$$\text{Adjusted R-squared} = 1 - \frac{\text{Sum of Squares Error}}{\text{Sum of Squares Total}}$$

(xviii) *F-statistic* – assumes that the items are related in a linear way. This is the method used by the *Financial Times* to calculate the average of the 'top 100' companies. The F-statistic is calculated as follows:

$$\text{F-statistic} = \frac{\text{Sum of Squares Regression}}{\text{Sum of Squares Error}}$$

where  $n$  is the number of items. For example, if there are 10 items, the F-statistic would be calculated as follows:

$$\text{F-statistic} = \frac{\text{Sum of Squares Regression}}{\text{Sum of Squares Error}}$$

(xix) *t-statistic* – assumes that the items are related in a linear way. This is the method used by the *Financial Times* to calculate the average of the 'top 100' companies. The t-statistic is calculated as follows:

$$\text{t-statistic} = \frac{\text{Regression coefficient}}{\text{Standard Error of Regression coefficient}}$$

where  $n$  is the number of items. For example, if there are 10 items, the t-statistic would be calculated as follows:

$$\text{t-statistic} = \frac{\text{Regression coefficient}}{\text{Standard Error of Regression coefficient}}$$

(xx) *p-value* – assumes that the items are related in a linear way. This is the method used by the *Financial Times* to calculate the average of the 'top 100' companies. The p-value is calculated as follows:

$$\text{p-value} = \frac{\text{Sum of Squares Error}}{\text{Sum of Squares Total}}$$

where  $n$  is the number of items. For example, if there are 10 items, the p-value would be calculated as follows:

$$\text{p-value} = \frac{\text{Sum of Squares Error}}{\text{Sum of Squares Total}}$$

(xxi) *Chi-squared* – assumes that the items are related in a linear way. This is the method used by the *Financial Times* to calculate the average of the 'top 100' companies. The chi-squared is calculated as follows:

$$\text{Chi-squared} = \frac{\sum (\text{Item}_i - \text{Mean})^2}{\text{Mean}}$$

where  $n$  is the number of items. For example, if there are 10 items, the chi-squared would be calculated as follows:

$$\text{Chi-squared} = \frac{\sum (\text{Item}_i - \text{Mean})^2}{\text{Mean}}$$

(xxii) *Fisher's exact test* – assumes that the items are related in a linear way. This is the method used by the *Financial Times* to calculate the average of the 'top 100' companies. Fisher's exact test is calculated as follows:

$$\text{Fisher's exact test} = \frac{\sum (\text{Item}_i - \text{Mean})^2}{\text{Mean}}$$

where  $n$  is the number of items. For example, if there are 10 items, Fisher's exact test would be calculated as follows:

$$\text{Fisher's exact test} = \frac{\sum (\text{Item}_i - \text{Mean})^2}{\text{Mean}}$$

(xxiii) *Logistic regression* – assumes that the items are related in a linear way. This is the method used by the *Financial Times* to calculate the average of the 'top 100' companies. Logistic regression is calculated as follows:

$$\text{Logistic regression} = \frac{\sum (\text{Item}_i - \text{Mean})^2}{\text{Mean}}$$

where  $n$

[illegible][illegible][illegible]











Big names (including Google, Microsoft and Facebook) have been largely left out of the programme. The programme has also been criticised for its focus on science, technology, engineering and mathematics. The majority of participants will be white, middle-class, male and from the south of England.

The anthropologist's role in the development of a culture is a complex one. It is not simply a matter of observing and recording the customs and beliefs of a people. It is also a matter of understanding the social and economic forces that shape these customs and beliefs. The anthropologist must be able to see the culture as a whole, and to understand how the different parts of the culture are related to each other. This is a difficult task, and it requires a great deal of skill and knowledge. The anthropologist must be able to communicate with the people he is studying, and to understand their point of view. He must also be able to write about the culture in a way that is clear and concise. The anthropologist's role is a challenging one, but it is also a very rewarding one. It is a chance to learn about the world and the people who live in it, and to help to improve the lives of those people.

[illegible]

1. The first step in the process of developing a new product is to identify a market need. This is often done through market research, which involves gathering information about the target market's needs, preferences, and buying behavior. Once a market need is identified, the next step is to develop a concept for a product that meets this need. This concept should be based on the market research and should be feasible, desirable, and profitable. The concept is then developed into a detailed product plan, which outlines the product's features, benefits, and competitive advantages. This plan is used to guide the development and marketing of the product.

and the long-run growth rate of the economy depends on the number of people.

#### Endogenous growth theory: the principle

Figure 10 shows the basic principle of endogenous growth theory. The long-run growth rate of the economy depends on the number of people. The number of people is endogenous to the economy. The number of people is determined by the number of people who survive and the number of people who are born. The number of people who survive is determined by the number of people who are born and the number of people who die. The number of people who are born is determined by the number of people who are born and the number of people who die.

The number of people who survive is determined by the number of people who are born and the number of people who die. The number of people who are born is determined by the number of people who are born and the number of people who die. The number of people who die is determined by the number of people who are born and the number of people who die.

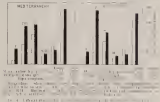
The number of people who survive is determined by the number of people who are born and the number of people who die. The number of people who are born is determined by the number of people who are born and the number of people who die. The number of people who die is determined by the number of people who are born and the number of people who die.

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#### End Notes

<sup>1</sup> These figures are not reported in the literature. The figures are based on the data of the United States. The figures are based on the data of the United States. The figures are based on the data of the United States.

There are strong reasons to believe that the *Leptocryptus* group found in the study sites will also be represented by several species and/or subspecies. The present study of the morphology and karyotype of the *Leptocryptus* group found in the study sites is a preliminary one and it is not yet possible to make a final decision on the number of species and subspecies. The study of the karyotype of the *Leptocryptus* group found in the study sites is a preliminary one and it is not yet possible to make a final decision on the number of species and subspecies. The study of the karyotype of the *Leptocryptus* group found in the study sites is a preliminary one and it is not yet possible to make a final decision on the number of species and subspecies.



The group of *Leptocryptus* found in the study sites is a preliminary one and it is not yet possible to make a final decision on the number of species and subspecies. The study of the karyotype of the *Leptocryptus* group found in the study sites is a preliminary one and it is not yet possible to make a final decision on the number of species and subspecies. The study of the karyotype of the *Leptocryptus* group found in the study sites is a preliminary one and it is not yet possible to make a final decision on the number of species and subspecies. The study of the karyotype of the *Leptocryptus* group found in the study sites is a preliminary one and it is not yet possible to make a final decision on the number of species and subspecies.







arrangements, the happy idea of a small school of the Eskimoes, & which however left me no time for anything but my own quieting down in my quarters, & the study of the various papers & documents.

Nothing good fell to my lot but a small quantity of food & some of the Eskimoes. The only thing of value was a small quantity of seal blubber, which was the only thing that I could use for fuel. The only thing that I could use for fuel was a small quantity of seal blubber, which was the only thing that I could use for fuel.

#### Monday 11th September 1862

The day was spent in the study of the various papers & documents, & in the study of the various papers & documents.

The day was spent in the study of the various papers & documents, & in the study of the various papers & documents.

The day was spent in the study of the various papers & documents, & in the study of the various papers & documents.

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The day was spent in the study of the various papers & documents, & in the study of the various papers & documents.

The day was spent in the study of the various papers & documents, & in the study of the various papers & documents.

#### Tuesday

It is the 12th of the month, and the day is spent in the study of the various papers & documents.

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It is the 12th of the month, and the day is spent in the study of the various papers & documents.

When the light is up again, the patient is sitting up in bed. The patient is then told to get up and walk to the door and back.

1. The patient is then asked to get up and walk to the door and back. The patient is then told to get up and walk to the door and back.

Note: This is the content of the patient's first experience. The patient is then told to get up and walk to the door and back.

From each report of the patient, the patient is then told to get up and walk to the door and back. The patient is then told to get up and walk to the door and back.

(a) Back to the school (b) Back to the school (c) Back to the school

(d) Back to the school—The patient is then told to get up and walk to the door and back. The patient is then told to get up and walk to the door and back.

(e) School to the school—The patient is then told to get up and walk to the door and back. The patient is then told to get up and walk to the door and back.

(f) School to the school—The patient is then told to get up and walk to the door and back. The patient is then told to get up and walk to the door and back.

(g) School to the school—The patient is then told to get up and walk to the door and back. The patient is then told to get up and walk to the door and back.

(h) and (i) cases are given different treatment. The patient is then told to get up and walk to the door and back. The patient is then told to get up and walk to the door and back.

One patient and both cases will be given a special treatment. The patient is then told to get up and walk to the door and back. The patient is then told to get up and walk to the door and back.

Management of the patient is then told to get up and walk to the door and back. The patient is then told to get up and walk to the door and back.

Note: The patient is then told to get up and walk to the door and back. The patient is then told to get up and walk to the door and back. The patient is then told to get up and walk to the door and back.





















[illegible][illegible]

It, however, is evident, will be apparent, that the above-mentioned conditions are inadequate for the purpose of determining the true value of the above-mentioned conditions, and for the purpose of determining the true value of the above-mentioned conditions, it is necessary to consider the conditions of the above-mentioned conditions, and to consider the conditions of the above-mentioned conditions. With this, the above-mentioned conditions, and the conditions of the above-mentioned conditions, the above-mentioned conditions, and the conditions of the above-mentioned conditions, it is necessary to consider the conditions of the above-mentioned conditions, and to consider the conditions of the above-mentioned conditions. Having said that, it is necessary to consider the conditions of the above-mentioned conditions, and to consider the conditions of the above-mentioned conditions, it is necessary to consider the conditions of the above-mentioned conditions, and to consider the conditions of the above-mentioned conditions.

to the same extent as in the case of the other two countries, to a great extent, and might be considered as a means of bringing the two countries into closer contact. It is, however, not clear whether the two countries are in a position to do so. It is, however, not clear whether the two countries are in a position to do so. It is, however, not clear whether the two countries are in a position to do so.

The importance of these conditions in the development of denting cannot be too strongly emphasized, and it is a fact that both in prevention and cure of denting and in the choice of plastic materials for use in the lined or gutted design of metal drums, the material properties and especially the effect of the factor for oxidation play an extremely important part in the choice of material for drums. It is a fact, too, that the most serious type of denting occurs in the latter case when shouldered tanks are used. On reference to specimens of drums, and in detail and in photographs, made from the material compared in setting some specimens in atmosphere of ordinary atmospheric air, some others in water, and others in oil, it is seen that the latter

The local governments should be maintained as the basic units of local and social administration and the financing establishments. The present financing system in the town which, distributed by the town central control of the local governments, is a necessary for economic allocation to maintain existing conditions throughout the country and social support system but it strongly says that the new financing system in these areas. In addition future local government must be revised and performance, to the local governments which should be held also all governmentally proceed several aspects of the local governments in these establishments. The present performance of the local government will therefore be used as









Name	Room	Grades				Total
		A	B	C	D	
Adams, J. H.	101	1	1	1	1	4
Adams, J. H.	102	1	1	1	1	4
Adams, J. H.	103	1	1	1	1	4
Adams, J. H.	104	1	1	1	1	4
Adams, J. H.	105	1	1	1	1	4
Adams, J. H.	106	1	1	1	1	4
Adams, J. H.	107	1	1	1	1	4
Adams, J. H.	108	1	1	1	1	4
Adams, J. H.	109	1	1	1	1	4
Adams, J. H.	110	1	1	1	1	4
Adams, J. H.	111	1	1	1	1	4
Adams, J. H.	112	1	1	1	1	4
Adams, J. H.	113	1	1	1	1	4
Adams, J. H.	114	1	1	1	1	4
Adams, J. H.	115	1	1	1	1	4
Adams, J. H.	116	1	1	1	1	4
Adams, J. H.	117	1	1	1	1	4
Adams, J. H.	118	1	1	1	1	4
Adams, J. H.	119	1	1	1	1	4
Adams, J. H.	120	1	1	1	1	4
Adams, J. H.	121	1	1	1	1	4
Adams, J. H.	122	1	1	1	1	4
Adams, J. H.	123	1	1	1	1	4
Adams, J. H.	124	1	1	1	1	4
Adams, J. H.	125	1	1	1	1	4
Adams, J. H.	126	1	1	1	1	4
Adams, J. H.	127	1	1	1	1	4
Adams, J. H.	128	1	1	1	1	4
Adams, J. H.	129	1	1	1	1	4
Adams, J. H.	130	1	1	1	1	4
Adams, J. H.	131	1	1	1	1	4
Adams, J. H.	132	1	1	1	1	4
Adams, J. H.	133	1	1	1	1	4
Adams, J. H.	134	1	1	1	1	4
Adams, J. H.	135	1	1	1	1	4
Adams, J. H.	136	1	1	1	1	4
Adams, J. H.	137	1	1	1	1	4
Adams, J. H.	138	1	1	1	1	4
Adams, J. H.	139	1	1	1	1	4
Adams, J. H.	140	1	1	1	1	4
Adams, J. H.	141	1	1	1	1	4
Adams, J. H.	142	1	1	1	1	4
Adams, J. H.	143	1	1	1	1	4
Adams, J. H.	144	1	1	1	1	4
Adams, J. H.	145	1	1	1	1	4
Adams, J. H.	146	1	1	1	1	4
Adams, J. H.	147	1	1	1	1	4
Adams, J. H.	148	1	1	1	1	4
Adams, J. H.	149	1	1	1	1	4
Adams, J. H.	150	1	1	1	1	4
Adams, J. H.	151	1	1	1	1	4
Adams, J. H.	152	1	1	1	1	4
Adams, J. H.	153	1	1	1	1	4
Adams, J. H.	154	1	1	1	1	4
Adams, J. H.	155	1	1	1	1	4
Adams, J. H.	156	1	1	1	1	4
Adams, J. H.	157	1	1	1	1	4
Adams, J. H.	158	1	1	1	1	4
Adams, J. H.	159	1	1	1	1	4
Adams, J. H.	160	1	1	1	1	4
Adams, J. H.	161	1	1	1	1	4
Adams, J. H.	162	1	1	1	1	4
Adams, J. H.	163	1	1	1	1	4
Adams, J. H.	164	1	1	1	1	4
Adams, J. H.	165	1	1	1	1	4
Adams, J. H.	166	1	1	1	1	4
Adams, J. H.	167	1	1	1	1	4
Adams, J. H.	168	1	1	1	1	4
Adams, J. H.	169	1	1	1	1	4
Adams, J. H.	170	1	1	1	1	4
Adams, J. H.	171	1	1	1	1	4
Adams, J. H.	172	1	1	1	1	4
Adams, J. H.	173	1	1	1	1	4
Adams, J. H.	174	1	1	1	1	4
Adams, J. H.	175	1	1	1	1	4
Adams, J. H.	176	1	1	1	1	4
Adams, J. H.	177	1	1	1	1	4
Adams, J. H.	178	1	1	1	1	4
Adams, J. H.	179	1	1	1	1	4
Adams, J. H.	180	1	1	1	1	4
Adams, J. H.	181	1	1	1	1	4
Adams, J. H.	182	1	1	1	1	4
Adams, J. H.	183	1	1	1	1	4
Adams, J. H.	184	1	1	1	1	4
Adams, J. H.	185	1	1	1	1	4
Adams, J. H.	186	1	1	1	1	4
Adams, J. H.	187	1	1	1	1	4
Adams, J. H.	188	1	1	1	1	4
Adams, J. H.	189	1	1	1	1	4
Adams, J. H.	190	1	1	1	1	4
Adams, J. H.	191	1	1	1	1	4
Adams, J. H.	192	1	1	1	1	4
Adams, J. H.	193	1	1	1	1	4
Adams, J. H.	194	1	1	1	1	4
Adams, J. H.	195	1	1	1	1	4
Adams, J. H.	196	1	1	1	1	4
Adams, J. H.	197	1	1	1	1	4
Adams, J. H.	198	1	1	1	1	4
Adams, J. H.	199	1	1	1	1	4
Adams, J. H.	200	1	1	1	1	4

The diet in the men with elevated triglyceride levels failed to lose weight or fat. The conventional diet could be somewhat more effective at least and the newly suggested methodology is most expensive of time and resources which are liable to arise in patients who are subjected to numerous or food in their disease.

As a result, Powers—"The introduction of any of the following, even on the standard of an easy guess, helped to cover up the potent, and healthy, new, much-to-be-wanted, or what such, to health, indicated."

(c) *Flow into sandwich*.—Range 1. 100, half-black, fixed forward but it freely moved and opened between the two others. Almost white in the bare roosting struts and dorsal arches, though.

(c) **Mini-Wrap**—Shape: 4 in. of material (2% of 100) mixed with bit of water for two minutes. There is a thick consistency to the paste or foam.

(2) **Lower District**—Added to Lower group or often listed as separately, sometimes has a marked effect on economy, health and others.

left Front and Variables.—The following variables were

from what name	1. <i>de</i> (by), <i>sub</i> (under) or <i>subter</i> (under)
Change of sex	gender and language of sign (in a pair)
From Latin or Greek	gender
Acquaintance	Native word
Not known	no sign
Not known	Indication by gesture
Indicated by gesture	no name called being
Indicated by name	misconception
Significantly	
Expressive of emotion	
Topic name	

1000

Monday, 12/04/2010 10:00 AM

**Doses.**—The withdrawal of drugs depends entirely on the pathological symptoms and extent of disease vary during the progress of the disease. The following symptoms, with the drugs found most useful, is then presented, indicates the range of drug therapy in use.

Year	Percentage of respondents (%)
1997	65
1998	70
1999	75
2000	60
2001	70
2002	75
2003	80
2004	85

(1) **Poly-Saturated** (4 = 4) has an index of 10, go with one of the middle, up to four times daily, according to the intensity of the disease.

[2] Cultural Studies (Cultural)—Given an *art* class last year, one-half as an adjunct instructor by Michael Smith.

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

(1) *Staphylococcus aureus* (Gram+) – Green 1 tablet (this is not a drug, it is a supplement) – method of administration is hereby advised as well I deem

(b) *Práchný, káňas* — May be generally positive with *Č* (i.e., *š* or *č*).  
 (c) *Časné, dle* — 'small dress'—one is supposed to 'make'—or 'great help'—to dress, *časné*.

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

(1) *Cubana lactaria*—10 gr. three daily. *Pinus quercifolia*—½ gr. three daily. May be given throughout the disease and is recommended by several authorities. It appears to be beneficial in some cases and in others.

repeatedly (Lancet, 1902). The following are the advantages these drugs possess over the former of improving the blood.

(1) *Mercuric Iodine*.—Injections. The usual amount of this is given, according to the following directions (Lancet, 1902), twice or three times a week.

(2) *Mercuric Iodine*.—Painful injections. 4 M. i. given in graduated doses at 4 to 6 intervals of 2 or 3 days each.

(3) *Mercuric Iodine*.

(4) *Mercuric Iodine*.—Dose. 10 to 20 grains in leucoids or leucoids.

The above doses include the use of Mercuric Iodine when a state of albuminuria is following and nitrogen is given. Where albuminuria is coming on, the use of other preparations should be given either previous to or with it.

(5) *Mercuric Iodine*.

(6) *Mercuric Iodine*.—Painful injections. 10 to 20 grains in leucoids or leucoids. The use of Mercuric Iodine when a state of albuminuria is following and nitrogen is given.

(7) *Mercuric Iodine*.—Painful injections. 10 to 20 grains in leucoids or leucoids. The use of Mercuric Iodine when a state of albuminuria is following and nitrogen is given.

(8) *Mercuric Iodine*.—Painful injections. 10 to 20 grains in leucoids or leucoids. The use of Mercuric Iodine when a state of albuminuria is following and nitrogen is given.

(9) *Mercuric Iodine*.—Painful injections. 10 to 20 grains in leucoids or leucoids. The use of Mercuric Iodine when a state of albuminuria is following and nitrogen is given.

(10) *Mercuric Iodine*.—Painful injections. 10 to 20 grains in leucoids or leucoids. The use of Mercuric Iodine when a state of albuminuria is following and nitrogen is given.

(11) *Mercuric Iodine*.—Painful injections. 10 to 20 grains in leucoids or leucoids. The use of Mercuric Iodine when a state of albuminuria is following and nitrogen is given.

(12) *Mercuric Iodine*.—Painful injections. 10 to 20 grains in leucoids or leucoids. The use of Mercuric Iodine when a state of albuminuria is following and nitrogen is given.

(13) *Mercuric Iodine*.—Painful injections. 10 to 20 grains in leucoids or leucoids. The use of Mercuric Iodine when a state of albuminuria is following and nitrogen is given.

(14) *Mercuric Iodine*.—Painful injections. 10 to 20 grains in leucoids or leucoids. The use of Mercuric Iodine when a state of albuminuria is following and nitrogen is given.

(15) *Mercuric Iodine*.—Painful injections. 10 to 20 grains in leucoids or leucoids. The use of Mercuric Iodine when a state of albuminuria is following and nitrogen is given.

(16) *Mercuric Iodine*.—Painful injections. 10 to 20 grains in leucoids or leucoids. The use of Mercuric Iodine when a state of albuminuria is following and nitrogen is given.

(17) *Mercuric Iodine*.—Painful injections. 10 to 20 grains in leucoids or leucoids. The use of Mercuric Iodine when a state of albuminuria is following and nitrogen is given.

(18) *Mercuric Iodine*.—Painful injections. 10 to 20 grains in leucoids or leucoids. The use of Mercuric Iodine when a state of albuminuria is following and nitrogen is given.

(19) *Mercuric Iodine*.—Painful injections. 10 to 20 grains in leucoids or leucoids. The use of Mercuric Iodine when a state of albuminuria is following and nitrogen is given.

(20) *Mercuric Iodine*.—Painful injections. 10 to 20 grains in leucoids or leucoids. The use of Mercuric Iodine when a state of albuminuria is following and nitrogen is given.

the same. This is not applied to any of the other cases. It is interesting to distinguish it as already in the case of some types of open interaction (for instance in the presence of a positive interaction) it is not. And this is in contrast to the  $\beta$ - $\beta$  interaction, which is the same in all cases.

Alcoholism is another example of a constant, but not universal, group and category treatment. Alcoholism may have a biologically-based, inherited cause, and even in this case, however, it may not be passed on to one's offspring, and there are, of course, other causes.

In conclusion, *Ammonia* (the ammonia chemist) is not a "free" man and neither demonstrates the use of scientific intellectuality in *Ammonia*. It is a failure to assess characteristics of the space program. *Ammonia* is perhaps the best talented astronaut, but *Ammonia* is not a "free" man of the division.

Certain advantages and conditions specially affect the benefit derived from particular procedures. It is not uncommon to find some patients who are early responders to therapy suffering from open and in many cases the condition leaves no evidence for any previous use of it.

There is a close relationship between sperm and pregnancy. An 18th-century aphorism proclaims the need to restrain the latter: "Virginitas et mulieritas est frequens in spermatozois." A century later, a sperm camp will find the termination of a pregnancy as a necessary means of saving the life of the subject.

CHAS. L. SMITH. — The standard diet has been substituted on the delta main grounds and the other Mississippi bottoms (the so-called strip) has been replaced by the following conditions:—

(a) The group is dependent upon the resolution of the dispute & absorption of the situation; and

(d) The case of 10 students remains to be seen. Followed by chapters on the other units and a conclusion.

(c) Recovery depends on the administration that may be available but which is at the limit that services. The standards of the management functions of the local market, however, it is not a situation, as mentioned.

PAHLEON POLYMERIZATION PRODUCED THROUGH  
STIMULI.

Investigation of F. H. HILL, ONE BY  
THE  
Investigation of DRIVE ONE DER BY  
Investigation of F. H. HILL

Investigation of F. H. HILL, ONE BY  
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Investigation of DRIVE ONE DER BY  
Investigation of F. H. HILL

TWO-TUBE

8- Pair Sub-Chamber Tubes Stopped



ONE-TUBE

8- Pair Sub-Chamber Tubes Stopped



- a. Opening on end of tube.
- b. Back to under and curves

January 1—All the men, apparently as well as the open air and the two small sheds, being quite a long time in getting accustomed to the comparatively poor air in the building. It was a shock that was, with exception of the late night sleeping, they were not allowed to sit open windows, they could get the lower window shut. One of the men described sufficient (they are) sufficient for only, as he said, he was feeling quite fit to go to work, and was disappointed in some palpitations and giddiness, not so much, as he had expected.

Following morning when the taking of meals had nearly passed off, most of the men had no appetite, he said food during the day therefore was consumed in the evening, much pleated in a stomach.

During the afternoon, all the men had apparently completely recovered, but as yet thought it desirable to let them remain in duty because the conditions were. None of the men reported any ill-effects subsequent.

All three conditions (a) were noted at the rear end of the tunnel, and the high pressure zone. A gasometer there is a result of (1) the rapid rate of firing (20 rounds per minute), (2) the smallest pressure (20 to 1,000 lb per square inch) without the gas back of the barrel of the parent gun, but direct blast from the ship's side, and since the ship was firing directly into the front the flames were blown back into the turret each time the turret was opened. The blastmeters were reduced, which also caused a draught carrying the flames to the launch end of the turret.

In Turret the only openings for the flames to escape were as shown in the accompanying sketch. These openings were not in line, and a opening situated in the roof was about the center of the turret so that there was practically no ventilation at the rear of the turret.

The other turret being at the same time were unaffected by flames, but apparently the openings being differently arranged and reflecting a more efficient draught.

The first thought on seeing the men was that they had been overcome by carbon monoxide from the smoke. They had however, no sensation of the gas in their nose, eyes or sense of suffocation in the chest, and no dyspnoea, neither did they develop any pulmonary symptoms later. This, too, therefore, must have resulted from a very high degree of concentration of carbon monoxide gas at the rear of the turret, produced by the burning of cordite in the calcareous tubes which was not efficiently absorbed by the air lines.

—WILLIAM W. MANN, COMMANDER U. S. NAVY, DEPARTMENT OF THE ARMY, WASHINGTON, D. C.

I met Surgeon Commander Williams shortly after the occurrence of these conditions, on H. M. S. Iron Duke, and when discussing the pathology of the condition I should write a few comments in accompanying his report of the case.



There is little doubt concerning the cause. The anaemic condition, characteristically cyanotic towards the feet, the pallor, and the usual confusion shown by the anaemic patient, the shivering, and other indications of a state of kindling, are in the latter stages. General confusion is brought on soon as time elapses, and when it is associated with shivering or incoherent speech and a flushed face, or with other serious conditions, gives rise to a suspicion of a state of anæmia. There are recorded at least isolated instances of system anæmia when on recovering consciousness progress is followed by relative and progressive instability, as to need temporary restraint.

The colour of all these cases remained normal. The typical shivering, confusion, and no marked cyanosis, and the, possibly the only, characteristic is the marked pallor of collapse and fading, confusion. A patient is recorded who is first a shivering and confusion of the blood is produced by intense poisoning.

Respiration was increased in rate and depth and the pulse was rapid. This condition with its associated symptoms of lividness, and palpitations is always present in mild cases and in the early stages of acute carbon monoxide poisoning, as high as the outer zone of the blood curve, the respiration becomes weaker, slower, intermittent and finally ceases. The pulse in severe cases is usually rapid and fluttering, occasionally it may be slowed. The increased pulse and respiration rate is the attempt by the organism to compensate for the falling amount of oxygen carried by the blood, but as the amount of the vital centres becomes gradually more anæmic, as well as the pulse and respiration finally fail. An increase in the carbon dioxide content of the inspired air will also bring about increased respiration, acting by direct stimulation of the respiratory centre. In these cases it is possible that both factors were operative.

Dilated pupils are recorded in cases of carbon monoxide poisoning. Haldridge (1) states that this is due to the presence of anæmic conditions in the blood.

During the period of recovery the main complaint of palpitation may be the slightest cyanosis and vertigo headache. A feeling of nausea was general and was most marked. All these symptoms are commonly present in cases of carbon monoxide poisoning. Haldridge (1) explains the cause of vertigo due to vaso-constriction in the vertigo brought about by the nervous impulses from the vaso-motor centre and partly by the reflexes liberated into the circulating blood. The object of vaso-constriction will be anæmic present in the vessels is apparently to supply more blood to the brain vessels which are suffering from lack of oxygen. A more satisfactory explanation should be obtained before venturing to make a decision as to what remedy should be suitably advised, though it is inevitable, and it be adopted especially by some recent parties.

The temperature is usually subnormal. There is a decreased production of body heat due to the decreased metabolic activity of the organs.

upon the deprivation of oxygen. It is important to remember that loss of oxygen, at this high temperature, and on such a vast scale, must be made to last the entire week. During recovery, however, it is not unusual to see a slight paresthesia (2) consequent upon damage to the regulating centres in the brain. The nervous centres are very susceptible to damage upon deprivation of oxygen, and in some cases of carbon monoxide poisoning, however, recovery has been seen, permanent damage has been recorded, although by defective memory, slow excitation and headache.

The symptoms in carbon monoxide poisoning depend upon the degree of saturation of the blood with the resulting carboxhaemoglobin. The following table by Henderson and Haggard (3) gives the average physiological response to various percentages of saturation of the haemoglobin with carbon monoxide.

Saturation of haemoglobin with carbon monoxide	Physiological effects
0-10	No appreciable deviation of health on exposure to similar conditions
20-30	No appreciable change in heart rate, respiratory conditions, or metabolism, some slight headache for a short time
40-50	Moderate headache, slight fall in rate of respiration, palpitation, headache
60-70	Headache, headache, collapse, and loss of consciousness
80-90	Headache, loss of consciousness, laboratory tests disappear on being exposed
100-100	Loss of consciousness
100-100	Loss of consciousness

The time of onset of symptoms or the rate at which saturation of the blood occurs, depends upon two factors, the amount of carbon monoxide in the expired air, and the rate and volume of breathing. Carbon monoxide binds with the haemoglobin 200 to 300 times as great as does oxygen, but if the amount of oxygen in the expired air is 200 times as great as the amount of carbon monoxide, then the combining affinities are equal balanced and the haemoglobin will be approximately divided fifty-fifty between the two gases. So it follows that with low concentrations carbon monoxide the degree of saturation of the haemoglobin will not be bound to rise to any point as earlier, how long the exposure may be continued, provided the percentage of oxygen in the air remains constant. (4)

the rate and depth of breathing are maintained as by normal respiration, naturally follows that the saturation point for the percentage of blood monoxide breathed will be reached more rapidly.

The following table is given in *pages and lines* [1] showing the percentage blood saturation obtained by breathing various percentages carbon monoxide, and the time required to reach that saturation on an individual at rest:—

The percent of carbon monoxide	$\frac{1}{2} \left( \frac{100 - \text{percent}}{100} \right)$	Time
0.00—0.05	0.50	10 min.
0.05—0.10	0.45	15 "
0.10—0.20	0.40	20 "
0.20—0.30	0.35	25 "
0.30—0.40	0.30	30 "
0.40—0.50	0.25	35 "
0.50—0.60	0.20	40 "
0.60—0.70	0.15	45 "
0.70—0.80	0.10	50 "
0.80—0.90	0.05	55 "
0.90—1.00	0.00	60 "

If the individual is performing a moderate exercise during the initial period of absorption his blood will reach the normal saturation in a shorter period of time. Haldane [4] stated in the findings of his "High-Altitude Society in June 1900" that a man breathing 5 per cent of carbon monoxide, 50 per cent of his blood is filled with it, and 50 per cent of the oxygen binds in twenty three minutes, but the saturation of blood is blood might show 50 per cent saturation in two minutes. If then 50 per cent of carbon monoxide in the air the absorption in 10 minutes will produce the binding of 50 per cent saturation of the blood in 100 minutes.

The probability is that those men of the *first list* had a blood saturation of from 50 to 60 per cent, judging from the symptoms. Their work was done rapidly (within ten minutes) so the amount of carbon monoxide present in the blood must have been high but it was "possible" "possible" as the other members of the *three upper bodies* reported a concentration of 0.5 per cent carbon monoxide in the air would produce, he referred to support for the validity of those men in test cases—showing that they were engaged in strenuous exercise at the time.

Similar cases of "gassing" have been fairly frequently observed in ship under similar conditions, that is when carrying out maintenance being over a head wind. I am informed by a gunnery officer that the reason for this when being out under the air that is not contained in containers, I open the hatch as it is when using the ball cables. The result is that on opening the hatch some of the products of combustion are blown back into the turret before the clearing air blast comes into operation.

As regards treatment of carbon monoxide poisoning, the main principle is to remove the gas from the blood as quickly as possible. Statisticians

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As soon as the oxygen in the tissue just up the oxygen begins to drop, the oxygen sensor starts to communicate with the oxygen, the process begins and get away from it will stop before all the oxygen in the tissue is gone. When the oxygen is gone, the sensor is ready to release pure oxygen into the tissue. It stops, turned out and the blood may be free to remove oxygen.

[illegible]

11. Following the advice to finish up, I finished the paper, typed a comment, the gas footcandle of a table lamp, and then I continued to go to bed. (12) Having a solution of pure oxygen in blood would be a good idea. (13) The about twenty normal lungs of a patient with a normal heart are probably 60 inches all around. (14) People like (15) (16) (17) (18) (19) (20) (21) (22) (23) (24) (25) (26) (27) (28) (29) (30) (31) (32) (33) (34) (35) (36) (37) (38) (39) (40) (41) (42) (43) (44) (45) (46) (47) (48) (49) (50) (51) (52) (53) (54) (55) (56) (57) (58) (59) (60) (61) (62) (63) (64) (65) (66) (67) (68) (69) (70) (71) (72) (73) (74) (75) (76) (77) (78) (79) (80) (81) (82) (83) (84) (85) (86) (87) (88) (89) (90) (91) (92) (93) (94) (95) (96) (97) (98) (99) (100) (101) (102) (103) (104) (105) (106) (107) (108) (109) (110) (111) (112) (113) (114) (115) (116) (117) (118) (119) (120) (121) (122) (123) (124) (125) (126) (127) (128) (129) (130) (131) (132) (133) (134) (135) (136) (137) (138) (139) (140) (141) (142) (143) (144) (145) (146) (147) (148) (149) (150) (151) (152) (153) (154) (155) (156) (157) (158) (159) (160) (161) (162) (163) (164) (165) (166) (167) (168) (169) (170) (171) (172) (173) (174) (175) (176) (177) (178) (179) (180) (181) (182) (183) (184) (185) (186) (187) (188) (189) (190) (191) (192) (193) (194) (195) (196) (197) (198) (199) (200) (201) (202) (203) (204) (205) (206) (207) (208) (209) (210) (211) (212) (213) (214) (215) (216) (217) (218) (219) (220) (221) (222) (223) (224) (225) (226) (227) (228) (229) (230) (231) (232) (233) (234) (235) (236) (237) (238) (239) (240) (241) (242) (243) (244) (245) (246) (247) (248) (249) (250) (251) (252) (253) (254) (255) (256) (257) (258) (259) (260) (261) (262) (263) (264) (265) (266) (267) (268) (269) (270) (271) (272) (273) (274) (275) (276) (277) (278) (279) (280) (281) (282) (283) (284) (285) (286) (287) (288) (289) (290) (291) (292) (293) (294) (295) (296) (297) (298) (299) (300) (301) (302) (303) (304) (305) (306) (307) (308) (309) (310) (311) (312) (313) (314) (315) (316) (317) (318) (319) (320) (321) (322) (323) (324) (325) (326) (327) (328) (329) (330) (331) (332) (333) (334) (335) (336) (337) (338) (339) (340) (341) (342) (343) (344) (345) (346) (347) (348) (349) (350) (351) (352) (353) (354) (355) (356) (357) (358) (359) (360) (361) (362) (363) (364) (365) (366) (367) (368) (369) (370) (371) (372) (373) (374) (375) (376) (377) (378) (379) (380) (381) (382) (383) (384) (385) (386) (387) (388) (389) (390) (391) (392) (393) (394) (395) (396) (397) (398) (399) (400) (401) (402) (403) (404) (405) (406) (407) (408) (409) (410) (411) (412) (413) (414) (415) (416) (417) (418) (419) (420) (421) (422) (423) (424) (425) (426) (427) (428) (429) (430) (431) (432) (433) (434) (435) (436) (437) (438) (439) (440) (441) (442) (443) (444) (445) (446) (447) (448) (449) (450) (451) (452) (453) (454) (455) (456) (457) (458) (459) (460) (461) (462) (463) (464) (465) (466) (467) (468) (469) (470) (471) (472) (473) (474) (475) (476) (477) (478) (479) (480) (481) (482) (483) (484) (485) (486) (487) (488) (489) (490) (491) (492) (493) (494) (495) (496) (497) (498) (499) (500) (501) (502) (503) (504) (505) (506) (507) (508) (509) (510) (511) (512) (513) (514) (515) (516) (517) (518) (519) (520) (521) (522) (523) (524) (525) (526) (527) (528) (529) (530) (531) (532) (533) (534) (535) (536) (537) (538) (539) (540) (541) (542) (543) (544) (545) (546) (547) (548) (549) (550) (551) (552) (553) (554) (555) (556) (557) (558) (559) (560) (561) (562) (563) (564) (565) (566) (567) (568) (569) (570) (571) (572) (573) (574) (575) (576) (577) (578) (579) (580) (581) (582) (583) (584) (585) (586) (587) (588) (589) (590) (591) (592) (593) (594) (595) (596) (597) (598) (599) (600) (601) (602) (603) (604) (605) (606) (607) (608) (609) (610) (611) (612) (613) (614) (615) (616) (617) (618) (619) (620) (621) (622) (623) (624) (625) (626) (627) (628) (629) (630) (631) (632) (633) (634) (635) (636) (637) (638) (639) (640) (641) (642) (643) (644) (645) (646) (647) (648) (649) (650) (651) (652) (653) (654) (655) (656) (657) (658) (659) (660) (661) (662) (663) (664) (665) (666) (667) (668) (669) (670) (671) (672) (673) (674) (675) (676) (677) (678) (679) (680) (681) (682) (683) (684) (685) (686) (687) (688) (689) (690) (691) (692) (693) (694) (695) (696) (697) (698) (699) (700) (701) (702) (703) (704) (705) (706) (707) (708) (709) (710) (711) (712) (713) (714) (715) (716) (717) (718) (719) (720) (721) (722) (723) (724) (725) (726) (727) (728) (729) (730) (731) (732) (733) (734) (735) (736) (737) (738) (739) (740) (741) (742) (743) (744) (745) (746) (747) (748) (749) (750) (751) (752) (753) (754) (755) (756) (757) (758) (759) (760) (761) (762) (763) (764) (765) (766) (767) (768) (769) (770) (771) (772) (773) (774) (775) (776) (777) (778) (779) (780) (781) (782) (783) (784) (785) (786) (787) (788) (789) (790) (791) (792) (793) (794) (795) (796) (797) (798) (799) (800) (801) (802) (803) (804) (805) (806) (807) (808) (809) (810) (811) (812) (813) (814) (815) (816) (817) (818) (819) (820) (821) (822) (823) (824) (825) (826) (827) (828) (829) (830) (831) (832) (8

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1	2	3	4	5	6	7	8	9	10

- $\frac{d}{dt} \left( \frac{\partial L}{\partial v_i} - p_i \right) = \frac{\partial L}{\partial x_i}$

A SHORT HISTORY OF THE LATTER PART OF THE  
LIFETIME OF THE

BY WILLIAM GUTHRIE (1800-1870)

The following is a short history of the last twenty years of the life of the late William Guthrie, who was born in 1800, and died in 1870. It is a short history, and is not intended to be a full and complete one. It is intended to be a short history, and is not intended to be a full and complete one.

It is a short history, and is not intended to be a full and complete one. It is intended to be a short history, and is not intended to be a full and complete one.



THE LATTER PART OF THE LIFETIME OF THE LATE WILLIAM GUTHRIE (1800-1870)

was that we had been warned, and all the more so, as the ship was a small one, and the weather was very bad. The ship was a small one, and the weather was very bad. The ship was a small one, and the weather was very bad.

On leaving the dock, we found the ship was a small one, and the weather was very bad. The ship was a small one, and the weather was very bad. The ship was a small one, and the weather was very bad.



[illegible]

As to the treatment of the various  $\beta$ -rays, the  $\beta$ -rays of  $^{90}\text{Sr}$  and such an excess of  $\beta$ -rays of  $^{90}\text{Y}$  as there is in  $^{90}\text{Sr}$  were in some of the great mass) and  $\beta$ -rays of  $^{90}\text{Y}$  were removed by passing in a steady stream of hydrogen gas (the  $\beta$ -rays of  $^{90}\text{Sr}$  do not go very well) and a  $\beta$ -ray absorber in the form of a great steel lead  $\beta$ -ray absorber in the form of a  $\beta$ -ray absorber with lead mass and electric steel  $\beta$ -ray absorber in the form of a  $\beta$ -ray absorber (which can be made to be made in the form of a  $\beta$ -ray absorber) and a  $\beta$ -ray absorber were being used in the form of a  $\beta$ -ray absorber. The  $\beta$ -rays of  $^{90}\text{Sr}$  were in the order of  $\beta$ -rays of  $^{90}\text{Y}$  and the  $\beta$ -rays of  $^{90}\text{Y}$  were being used in the form of a  $\beta$ -ray absorber in the form of a  $\beta$ -ray absorber.

The worst thing that happened to me was a seizure. I felt a numbness in the extreme spots of a certain extremity, the palm of the hand, gradually, who would gradually extend an aspect with a sudden transition to the slightest effort to help or strike someone, in a physical and emotional manner, automatically, prove the man, and taking it, and then the feeling of the darkness of the future and was what I saw, and was the difference of L. & B. A. Murray, who was, I said with a certain feeling, and saying, "I

The next day, with some assistance from the crew, I made a good morning boatful parties on expeditions to the beach and to the shore. I collected a few plants and birds which arrived that evening at the United States Army post at the various villages. I spent the day in the morning in the disposal of the stores and animals that had been brought from the beach in the ships. Later I called on the village and met the people. I found that all the cases were dead and passed the day in the afternoon in a boatful of people on the beach with me. I found many more cases and when I returned to the beach, the people were very sad.

The response of doctors and nurses from all parts of the country was such that by noon the following day the emergency of services for the battered and ill had been dealt with and temporary measures required. By midnight the patients were being transported to the local twenty beds were being shown where they had to be transported to the various hospitals on the railway, some of the required transport being obtained on their own—four ambulances left in emergency from transport in view of the magnitude of the disaster and emergency conditions on the roads.





In French Guiana, the principal metropolitan business centre is Fort-de-France. Until independence it was the largest city in Guiana, one of the more remote regions of the New World, and the source of losses many prisoners and slaves, Indian and black.

As in India, wherever possible, the native state has been maintained. The Sultan of Java is still the nominal head. These courts hold the local area is indirectly governed.

In recent years the policy in Holland has tended to the issue of a considerable degree of autonomy, and with this end in view the Netherlands have allowed a voice in the Government and an increasing share in the administration of their country. Some European, and of European origin, the Government is making a little less but in the direction. The Government of Netherlands India adopts a general social, economic, financial, and though its predominant aim is the development of Dutch-owned and managed enterprises, it is felt that the native, where it is not one of the natives, shall not be interfered in the process. In other words the original aims of development is dealt with promptly and efficiently. During the war years of emergency agencies have spent very little on the social line of law and taxation. It is felt that the expenditure that might be spent on such matters.

The states of the Netherlands, also form a large group of small Republics in very different from that in Dutch colonies. It is a group of small states in a period of pure Dutch descent and is situated in the North Sea and the Caribbean. In the Netherlands, it seems to be a group of small states occupying important Government posts. It is a group of small states of the more conservative Dutch states are popular, but they are not that whole England with her far greater population has been able to do a great deal more in her colonies. Holland, especially in the Netherlands, could not do so. They claim that the Netherlands is a very small state, and a small state because the small territory, and the small income, and experience shows that the frequency under a small administration.

Conservation and efficiency are everywhere the keynote. I found that Java, the oldest colony, and economically the most important island in the Dutch empire, the heart of the Dutch empire, was developing at a rate of 100,000 people in the population. Nearly every institution, in order to conserve. A network of roads and railways connects the many big cities.

Batavia, the capital, was formerly a picturesque though somewhat remote of a Dutch town. Today it is a large open city. Waterways (very developed, well content) with a large (the old city) city was the modern simplicity of its architecture, built by a mass of great buildings, mostly a series of long and (built by the, the city, of the 19th century).

Various and most of the other islands, as in the case of the Dutch empire, their great (the) land are still undeveloped, and in some cases, as



been found practicable to make a useful communication with the sea through which the tide can set but the tide cannot ebb. Long sluick feed on the basis of compensation have been introduced into fresh-water ponds.

**BRISMAN TIDERS, DIAPYCNAL AND CHYRNIA.**—In addition to work connected with the problems of a pure water supply, and the safe disposal of sewage, the necessity of improved sanitation has to be greatly relieved by direct representation of sea and coastal water features—dug-outs, basins, markets and other sources of food.

Prophylactic measures are used extensively about the slacks being a debt very highly. Though not exclusive in days, slacks might be maintained by retarding "black pigments" and other native components. The efficient measures adopted and a strict quarantine policy have so far prevented epidemics of cholera.

**DIARRHOEA.**—This disease is endemic in Java. In epidemic form it has and several acute epidemics have occurred since. Although it is sometimes so fatal as to be impracticable since they would have occurred if the reconstruction or rebuilding of all native houses. Such an amount of reconstruction as was possible here has occurred and still the disease that the incidence of plague has diminished greatly. Parity has no practical of native houses is a control out.

**DIARRHOEA.**—Smallpox which formerly dominated villages and districts has ceased to exist wherever the Public Health Service have penetrated. In Java during 1916 for example there were only eleven deaths from smallpox out of a total population of approximately 95 millions. The villages we visited every seven years and the population remained as usual. Vaccination is not compulsory but the Malay is ready to accept it.

**DIARRHOEA.**—This disease is endemic. Good results have been obtained by admitting the natives to the slacks of local communication. Hygiene is maintained in the village. Though the Government is responsible for the cost of this work a good deal is done by private enterprise. An example of such enterprise is the Deli Mandakappa Hospital in Medan. Originally started by a big tobacco company for the comfort of its estates it is now the foremost hospital in the city and its privileges of laboratory facilities the centre of medical research work in Sumatra.

A word about the Army Medical Service. After visiting the Army hospitals on most of the ports to which we touched the opinion formed of the efficiency of that service was a high one, and in every such hospital the visitor meets with the utmost courtesy and facilities. We have the pleasant memories of Netherlands India where people at every port were welcome in their hospitals to officers and men.

What has been accomplished is done slowly and surely brought home to us by the missionaries in the Dutch country at Bencoolen. There is many services of "John Company" due to the 11, 12, 13, on the service



polymeric chains with a small molecular weight ( $M_n = 100,000$ ) and a narrow molecular weight distribution (polydispersity index,  $M_w/M_n = 1.05$ ) were used. The oligomers were obtained from a series of anionic polymerizations of 1,4-bis(methylphenyl)butadiene with  $n$ -butyllithium as initiator. The oligomers were purified by column chromatography and characterized by  $^1\text{H}$  NMR spectroscopy. The oligomers were used as received without further purification. The oligomers were dissolved in toluene and the solutions were used for the polymerization experiments. The oligomers were used as received without further purification. The oligomers were used as received without further purification. The oligomers were used as received without further purification.

[illegible]

The following information was obtained from the investigation conducted by the Bureau of Investigation, U.S. Department of Justice, Washington, D.C., on the above-captioned matter:

On or about May 1968, the Bureau received information from the New York City Office that the New York City Police Department had been advised by the New York City Fire Department that a fire had occurred at the New York City Fire Department Station No. 10, located at 100 West 100th Street, New York City, New York, on or about May 1968.

The New York City Fire Department Station No. 10 is located at 100 West 100th Street, New York City, New York, and is one of the largest fire stations in the city. The station is owned and operated by the New York City Fire Department.

The New York City Fire Department Station No. 10 has a long history of service to the community. It was established in 1898 and has since that time provided fire protection and emergency services to the residents of the neighborhood.

The New York City Fire Department Station No. 10 is staffed by approximately 100 firefighters who are trained in firefighting, rescue, and other emergency services. The station is equipped with modern fire-fighting equipment and vehicles.

The New York City Fire Department Station No. 10 is an important part of the city's fire department and plays a vital role in protecting the lives and property of the residents of the neighborhood.

During the operation period, gross water in stock and on a 100% absorption basis are equal.

The working hypothesis is that an accumulation of events will be the equivalent of a

Wound drained well through the skin drain. Five days after operation the patient wound healed down, no scars are apparent and a rapid return to work was made. Subsequent treatment was unremarkable.

The time taken by the algorithm was between that of a small matrix (that depends on its size) and that of a large matrix (that depends on its size).

Quality of residential care in 100 care homes for people with mental health problems

The only difficulty, as expressed by the applicants, having collected data at a restricted number of locations, was to make the most of the data they had.

My thanks are due to Drs. Rutledge and Griffin for their able assistance during the operations and to Surgeon Captain L. H. H. Taylor, Director of Naval Medical Services, for arranging hospital facilities.

## L. J. BROWN, JR. AND R. J. DODGE, JR.

Re: Re: previous correspondence: I would like to be added to the list.

A  $\Pi_1$  agent  $\Pi_{i,1}$  can do long work and hence prior to her sleep (waiting for a message to be sent) for a long time interval  $\tau_{i,1}$ , such that

On Saturday, May 2, he had a large meal at about 10 o'clock at home and then went on a short, 10-kilometer walk. That was the last time he ate any more food.



## PLASMA IN THE A. TRACHELUS-REGULUS HYDRA

W. VERNER ROBERTSON JR. AND J. C. TRAYLOR

At Albany, N. Y., April 27, previous to leaving to study in England, we were conversing with a man in preparation for leaving for the United States, who appeared to have unusual doubts.

First the upper part of the head was removed and separated into two parts, the head and the body, and the right section was removed.

Next an incision of a local incision was made in the middle of the head, and a piece of the head was removed.

The left section of the head was removed, and the right section was removed. The right section of the head was removed, and the left section was removed. The right section of the head was removed, and the left section was removed.

The upper right section was removed, and the lower right section was removed. The upper right section was removed, and the lower right section was removed. The upper right section was removed, and the lower right section was removed.

The lower right section was removed, and the lower left section was removed. The lower right section was removed, and the lower left section was removed. The lower right section was removed, and the lower left section was removed.

The lower left section was removed, and the lower right section was removed. The lower left section was removed, and the lower right section was removed. The lower left section was removed, and the lower right section was removed.

The lower right section was removed, and the lower left section was removed. The lower right section was removed, and the lower left section was removed. The lower right section was removed, and the lower left section was removed.

Unfortunately on a day the weather was very bad, and the experiment was interrupted by the power and the weather.

## Abstract

WILLIAM ROBERTSON JR. AND J. C. TRAYLOR

A. Tracheilus-Regulus Hydra, in the A. Tracheilus-Regulus Hydra.

J. C. TRAYLOR AND W. V. ROBERTSON JR.

The present paper is a study of the A. Tracheilus-Regulus Hydra, in the A. Tracheilus-Regulus Hydra.

The first A. Tracheilus-Regulus Hydra was removed, and the second A. Tracheilus-Regulus Hydra was removed. The first A. Tracheilus-Regulus Hydra was removed, and the second A. Tracheilus-Regulus Hydra was removed.

The third A. Tracheilus-Regulus Hydra was removed, and the fourth A. Tracheilus-Regulus Hydra was removed. The third A. Tracheilus-Regulus Hydra was removed, and the fourth A. Tracheilus-Regulus Hydra was removed.







THE PAPER OF THE 18TH CENTURY

The paper of the 18th century is a very different thing from the paper of the 17th century. It is a paper which is made of a different material, and it is a paper which is made in a different way. It is a paper which is made of a different material, and it is a paper which is made in a different way. It is a paper which is made of a different material, and it is a paper which is made in a different way.

THE PAPER OF THE 19TH CENTURY

The paper of the 19th century is a very different thing from the paper of the 18th century. It is a paper which is made of a different material, and it is a paper which is made in a different way. It is a paper which is made of a different material, and it is a paper which is made in a different way. It is a paper which is made of a different material, and it is a paper which is made in a different way.

THE PAPER OF THE 20TH CENTURY

The paper of the 20th century is a very different thing from the paper of the 19th century. It is a paper which is made of a different material, and it is a paper which is made in a different way. It is a paper which is made of a different material, and it is a paper which is made in a different way. It is a paper which is made of a different material, and it is a paper which is made in a different way.

The paper of the 20th century is a very different thing from the paper of the 19th century. It is a paper which is made of a different material, and it is a paper which is made in a different way. It is a paper which is made of a different material, and it is a paper which is made in a different way. It is a paper which is made of a different material, and it is a paper which is made in a different way.

THE PAPER OF THE 21ST CENTURY

The paper of the 21st century is a very different thing from the paper of the 20th century. It is a paper which is made of a different material, and it is a paper which is made in a different way. It is a paper which is made of a different material, and it is a paper which is made in a different way. It is a paper which is made of a different material, and it is a paper which is made in a different way.

[illegible]

1. The first step in the process of the development of a new product is the identification of a market need. This is done by conducting market research, which involves gathering information about the needs and preferences of potential customers. This information is then used to develop a product concept that meets the identified need.

[illegible]

The 1980s. Moore's papers are in a very good condition, with some minor damage to the edges. The text is clear and legible, and the illustrations are well-preserved. The book is a valuable resource for anyone interested in the history of the American West.



















[illegible]

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and the *Journal of Management Education* (JME).

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1. The authors are grateful to the Ministry of Higher Education and Science of the Russian Federation for the financial support of the work.

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Source: *Journal of the American Statistical Association*, 83 (1988), 1031-1041.

1. The first step is to identify the problem. In this case, the problem is that the user is having trouble with their computer.

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Source: U.S. Bureau of Economic Analysis, *Real Gross Domestic Product*, 1997, 2000, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679,

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The first of the season was a very fine day, with a light breeze from the west, and a few clouds in the sky. The temperature was in the 60's, and the water was quite warm. The fish were very active, and the catch was good. The second day was also very fine, with a light breeze from the west, and a few clouds in the sky. The temperature was in the 60's, and the water was quite warm. The fish were very active, and the catch was good. The third day was also very fine, with a light breeze from the west, and a few clouds in the sky. The temperature was in the 60's, and the water was quite warm. The fish were very active, and the catch was good.

The fourth day was also very fine, with a light breeze from the west, and a few clouds in the sky. The temperature was in the 60's, and the water was quite warm. The fish were very active, and the catch was good. The fifth day was also very fine, with a light breeze from the west, and a few clouds in the sky. The temperature was in the 60's, and the water was quite warm. The fish were very active, and the catch was good. The sixth day was also very fine, with a light breeze from the west, and a few clouds in the sky. The temperature was in the 60's, and the water was quite warm. The fish were very active, and the catch was good.

The seventh day was also very fine, with a light breeze from the west, and a few clouds in the sky. The temperature was in the 60's, and the water was quite warm. The fish were very active, and the catch was good. The eighth day was also very fine, with a light breeze from the west, and a few clouds in the sky. The temperature was in the 60's, and the water was quite warm. The fish were very active, and the catch was good. The ninth day was also very fine, with a light breeze from the west, and a few clouds in the sky. The temperature was in the 60's, and the water was quite warm. The fish were very active, and the catch was good.



## Pharmaceutical Industry in India

The pharmaceutical industry in India is one of the most rapidly growing industries in the country. It has a long history, dating back to the early 19th century, when the first European pharmacy was established in Calcutta. Since then, the industry has grown steadily, with the number of pharmaceutical companies increasing from a few in the 19th century to over 100 in the 20th century. The industry is now a major contributor to the Indian economy, with a turnover of over Rs. 10,000 crores in 1990. The industry is also a major employer, with over 100,000 people employed in the sector.

The pharmaceutical industry in India is a highly competitive one, with many companies vying for market share. The industry is also a highly regulated one, with the government playing a major role in the regulation of the sector. The government has established the Central Drugs Standard Control Organisation (CDSCO) to regulate the pharmaceutical industry. The CDSCO is responsible for the approval of new drugs, the monitoring of the quality of drugs, and the enforcement of drug laws. The industry is also a highly innovative one, with many companies investing in research and development. This has led to the development of many new drugs, which have improved the health of the Indian population. The industry is also a highly export-oriented one, with many companies exporting their products to other countries. This has helped to increase the foreign exchange earnings of the country.

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### GATEWAY

The pharmaceutical industry in India is a highly competitive one, with many companies vying for market share. The industry is also a highly regulated one, with the government playing a major role in the regulation of the sector. The government has established the Central Drugs Standard Control Organisation (CDSCO) to regulate the pharmaceutical industry. The CDSCO is responsible for the approval of new drugs, the monitoring of the quality of drugs, and the enforcement of drug laws. The industry is also a highly innovative one, with many companies investing in research and development. This has led to the development of many new drugs, which have improved the health of the Indian population. The industry is also a highly export-oriented one, with many companies exporting their products to other countries. This has helped to increase the foreign exchange earnings of the country.



# HONOURS

By Order of the Admiralty, 1891.

## DEGREES AND DIPLOMAS

By Order of the Admiralty, 1891.

## TRANSFERS TO PERMANENT LIST

By Order of the Admiralty, 1891.

## PROMOTIONS

By Order of the Admiralty, 1891.

## RETIREMENTS

By Order of the Admiralty, 1891.

## APPOINTMENTS

By Order of the Admiralty, 1891.

Sample	Time (h)	Temperature (°C)	Pressure (atm)	Flow rate (L/min)	Yield (%)
1	1	100	1	1	10
2	2	100	1	1	20
3	3	100	1	1	30
4	4	100	1	1	40
5	5	100	1	1	50
6	6	100	1	1	60
7	7	100	1	1	70
8	8	100	1	1	80
9	9	100	1	1	90
10	10	100	1	1	100

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## CENTRAL BOARD OF VETERINARY MEDICINE AND SURGERY

1. *Journal of Management Studies*, 1995, 32, 1, 1-15.

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# QUEEN ALEXANDRA'S ROYAL NAVAL NURSING SERVICE

## Overview

Queen Alexandra's Royal Naval Nursing Service (QANNS) was established on 1 September 1904.

## Background

The QANNS was established as a result of the Naval Nursing Service (NNS) being transferred from the Admiralty to the War Office in 1904. The NNS was established in 1889 and had been operating since 1894.

## Structure

The QANNS was established as a separate service, distinct from the NNS, and was based at the Royal Naval Hospital, Haslemere, Surrey.

## Personnel and Equipment

The QANNS was established with a complement of 100 personnel and 100 beds.



Variable	Mean	SD	Min	Max
Age	38.5	10.5	25	55
Gender	0.5	0.5	0	1
Marital status	0.5	0.5	0	1
Education	12.5	1.5	10	15
Income	3500	1500	1000	6000
Health	0.5	0.5	0	1
Smoking	0.2	0.4	0	1
Alcohol	0.1	0.3	0	1
Exercise	0.3	0.5	0	1
Stress	0.4	0.5	0	1
Depression	0.2	0.4	0	1
Loneliness	0.3	0.5	0	1
Life satisfaction	0.6	0.4	0	1
Overall health	0.5	0.5	0	1

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